```
=> file reg
FILE 'REGISTRY' ENTERED AT 16:15:36 ON 03 FEB 2005
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=> d his


     FILE 'LREGISTRY' ENTERED AT 12:19:57 ON 03 FEB 2005
L1                STR
L2              529 S CLO4
L3                STR

     FILE 'REGISTRY' ENTERED AT 13:30:27 ON 03 FEB 2005
L4                1 S L1
L5                SCR 2040 AND 1838
L6               32 S L1 AND L5
L7                SCR 2127
L8               31 S L1 AND L5 AND L7
L9            10154 S L1 AND L5 AND L7 FUL
                  SAV L9 LEE842/A

     FILE 'LREGISTRY' ENTERED AT 13:39:51 ON 03 FEB 2005
L10               STR
L11               STR
L12               STR L11
L13               STR L12

     FILE 'REGISTRY' ENTERED AT 15:28:00 ON 03 FEB 2005
L14              50 S L1 AND L3 AND L5 AND L7 SSS SAM SUB=L9
L15            3716 S L1 AND L3 AND L5 AND L7 SSS FUL SUB=L9
                  SAV L15 LEE842A/A
L16              41 S L10 SSS SAM SUB=L9
L17             872 S L10 SSS FUL SUB=L9
                  SAV L17 LEE842B/A
L18               0 S L12 SSS SAM SUB=L9
L19               STR L12
L20               0 S L19 SSS SAM SUB=L9
L21               0 S L19 SSS FUL SUB=L9
L22               STR L19
L23               1 S L22 SSS SAM SUB=L9
L24              20 S L22 SSS FUL SUB=L9
                  SAV L24 LEE842C/A

     FILE 'CAOLD' ENTERED AT 15:46:04 ON 03 FEB 2005
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L25             1 S L24

     FILE 'ZCA' ENTERED AT 15:46:14 ON 03 FEB 2005
L26             9 S L24

     FILE 'REGISTRY' ENTERED AT 15:47:48 ON 03 FEB 2005
L27           377 S L17 AND L15

     FILE 'HCA' ENTERED AT 15:54:51 ON 03 FEB 2005
L28            92 S L27
L29         21480 S PHOTOACID# OR PHOTOGENERAT? OR PHOTO(2A)(ACID# OR GENER
L30             9 S L28 AND L29
L31          2277 S L15
L32           269 S L31 AND L29

     FILE 'HCAPLUS' ENTERED AT 16:05:50 ON 03 FEB 2005
L33           230 S YUEH ?/AU
L34            28 S PUTNA ?/AU
L35             0 S L33 AND L34
L36            56 S YUEH W?/AU
L37            13 S PUTNA E?/AU
L38             7 S (L36 OR L37) AND L29
                  SEL L38 1-7 RN

     FILE 'REGISTRY' ENTERED AT 16:07:33 ON 03 FEB 2005
L39            42 S E1-E42
L40             0 S L39 AND L9
L41             0 S L39 AND I/ELS
L42             6 S L39 AND S/ELS

     FILE 'REGISTRY' ENTERED AT 16:15:36 ON 03 FEB 2005


=> d l17 que stat
L1                STR
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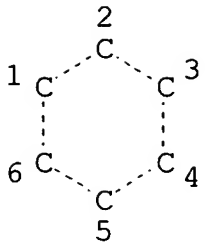


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 @7      @9
  I       S       G1 11
 +1      +1
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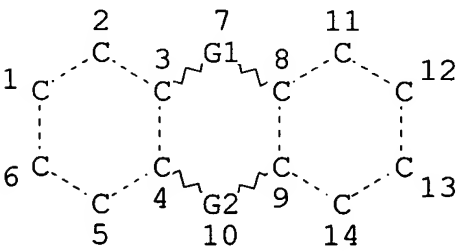
VAR G1=7/9
NODE ATTRIBUTES:
CHARGE IS E+1 AT 7
CHARGE IS E+1 AT 9
NSPEC IS R AT 7
NSPEC IS R AT 9
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
L5 SCR 2040 AND 1838
L7 SCR 2127
L9 10154 SEA FILE=REGISTRY SSS FUL L1 AND L5 AND L7
L10 STR



VAR G1=I/S
VAR G2=O/S/CH2/I
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE
L17 872 SEA FILE=REGISTRY SUB=L9 SSS FUL L10

100.0% PROCESSED 2784 ITERATIONS 872 ANSWERS
SEARCH TIME: 00.00.01

=> file hca
FILE 'HCA' ENTERED AT 16:16:28 ON 03 FEB 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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=> d l30 1-9 cbib abs hitstr hitind

L30 ANSWER 1 OF 9 HCA COPYRIGHT 2005 ACS on STN
140:294782 Resist composition. Takahashi, Hyou; Mizutani, Kazuyoshi; Yasunami, Shoichiro (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004058272 A1 20040325, 54 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-654942 20030905. PRIORITY: JP 2002-261401 20020906.

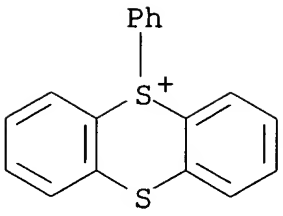
AB A neg. type resist compn. comprises: (A1) a compd. **generating** a sulfonic **acid** upon irradn. with actinic rays or a radiation and having the specific formula, (A2) a compd. **generating** a sulfonic **acid** upon irradn. with actinic rays or a radiation and having the specific structure, (B) an alkali-sol. resin, and (C) a crosslinking agent capable of carrying out an addn. reaction with the alkali-sol. resin which is the component (B) by the action of an acid.

IT **195072-48-1**
(**acid generator**; resist compn. contg.)

RN 195072-48-1 HCA
CN Thianthrenium, 5-phenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

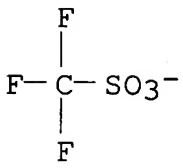
CM 1

CRN 47041-10-1
CMF C18 H13 S2



CM 2

CRN 37181-39-8
CMF C F3 O3 S



IC ICM G03F007-004
ICS G03F007-20; G21K005-00; G03F007-30
NCL 430270100; 430296000; 430311000; 378034000; 430325000; 430326000; 430921000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST resist compn **photoacid** generator
IT 442906-47-0
(**acid generator**; 123445e28sist compn. contg.)
IT 144767-83-9P
(**acid generator**; resist compn. contg.)
IT 66003-78-9 111281-12-0 144317-44-2 153698-46-5 193345-23-2
195072-48-1 197447-16-8 258341-98-9 338445-29-7
338445-31-1 389859-76-1 641638-14-4 641638-15-5 641638-16-6
641638-17-7 641638-26-8 641638-27-9 641638-32-6 672326-93-1
672326-95-3
(**acid generator**; resist compn. contg.)
IT 536-80-1, Iodosylbenzene 1493-13-6, Trifluoromethanesulfonic acid
(prepn. of **acid generator** for resist compn.)

L30 ANSWER 2 OF 9 HCA COPYRIGHT 2005 ACS on STN
140:278419 Photoesist composition. Takahashi, Hyou; Mizutani, Kazuyoshi; Shirakawa, Koji; Yasunami, Shoichiro (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004053160 A1 20040318, 98 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-613044

20030707. PRIORITY: JP 2002-196011 20020704; JP 2002-261345 20020906; JP 2003-85831 20030326.

AB A resist compn. comprises: (A) a compd. capable of generating an active seed upon irradn. with one of an actinic ray and a radiation, (B) a compd. capable of reacting with the active seed generated from the compd. (A) and/or performing electron transfer to generate an active seed different from the active seed generated from the compd. (A), and (C) a compd. capable of performing electron transfer from the active seed generated from the compd. (B) to **generate** an **acid**, wherein supposing that the 1/2 wave of the oxidn. potential of the active seed generated from the compd. (B) is Epa and the 1/2 wave of the redn. potential of the active seed generated from the compd. (C) is Epc , the relationship: Epc - Epa > 0 is satisfied.

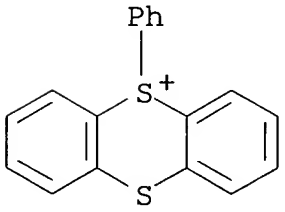
IT **195072-48-1**
(**acid generator**; photoresist compn. contg.)

RN 195072-48-1 HCA

CN Thianthrenium, 5-phenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

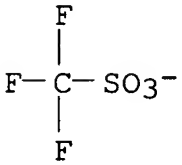
CM 1

CRN 47041-10-1
CMF C18 H13 S2



CM 2

CRN 37181-39-8
CMF C F3 O3 S



IC ICM G03F007-00
ICS G03F007-004

NCL 430270100; 430914000; 430921000; 430919000; 430925000; 430966000; 430942000; 430927000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 66003-78-9 111281-12-0 129946-88-9 143521-46-4 144317-44-2 177786-98-0 **195072-48-1** 338445-31-1 578741-79-4 578741-92-1 641638-14-4 641638-15-5 641638-16-6 641638-17-7 641638-26-8 641638-27-9 641638-32-6 672326-86-2 672326-87-3 672326-88-4 672326-89-5 672326-90-8 672326-91-9 672326-92-0 672326-93-1 672326-95-3
(**acid generator**; photoresist compn. contg.)
IT 139-66-2, Diphenyl sulfide 1493-13-6, Trifluoromethane sulfonic acid
(prepn. of **acid generator** for photoresist compn.)
IT 144767-83-9P
(prepn. of **acid generator** for photoresist compn.)

L30 ANSWER 3 OF 9 HCA COPYRIGHT 2005 ACS on STN
138:409368 Positive-working resist composition showing excellent sensitivity, resolution, and pattern profile. Takahashi, Omote; Yasunami, Shoichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003149800 A2 20030521, 28 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-346121 20011112.
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title pos.-working resist compn., sensitive to an electron beam, x-ray, and 150-250 nm excimer laser, comprises (A) an **acid generator** represented by I (W = CH2, CYH, NH; Y = aryl, alkyl; R1a-8a = H, halo, OH, thiol, nitro, cyano, carboxyl, amino, alkyl, alkoxyl), II (R1-15 = H, alkyl, alkoxy, hydroxy, halo, SR38; R38 = alkyl, aryl; X = F-contg. alkylsulfonic acid, benzenesulfonic acid, naphthalenesulfonic acid, anthracenesulfonic acid), III (R16-27 = H, alkyl, alkoxy, hydroxy, halo, SR38; R38 = alkyl, aryl; X = F-contg. alkylsulfonic acid, benzenesulfonic acid, naphthalenesulfonic acid, anthracenesulfonic acid), or IV (R28-37 = H, alkyl, alkoxy, hydroxy, halo, SR38; R38 = alkyl, aryl; X = F-contg. alkylsulfonic acid, benzenesulfonic acid, naphthalenesulfonic acid, anthracenesulfonic acid), and (B) a polymer which is insol. or difficult sol. to an alk. aq. soln. and becomes sol. to the alk. aq. soln. upon an interaction with the **generated acid**, and optionally (C) a N-contg. base

compd.

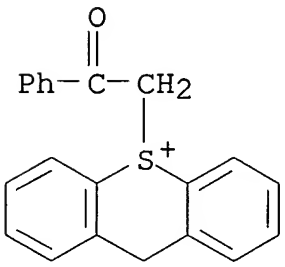
IT **514846-98-1 514847-00-8 514847-12-2 528853-06-7**
(acid generator; pos.-working resist compn. showing excellent sensitivity, resoln., and pattern profile)

RN 514846-98-1 HCA

CN 9H-Thioxanthenium, 10-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 514846-97-0
CMF C21 H17 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

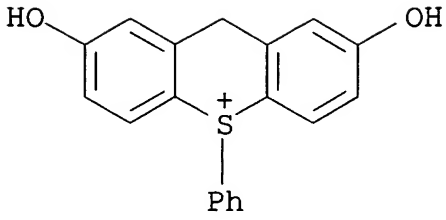
$^{-}O_3S-(CF_2)_3-CF_3$

RN 514847-00-8 HCA

CN 9H-Thioxanthenium, 2,7-dihydroxy-10-phenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 514846-99-2
CMF C19 H15 O2 S



CM 2

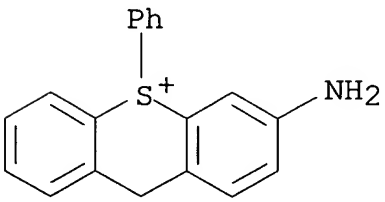
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 514847-12-2 HCA
CN 9H-Thioxanthenium, 3-amino-10-phenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 514847-11-1
CMF C19 H16 N S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

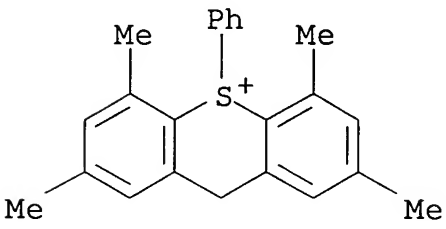
$^{-}O_3S-(CF_2)_3-CF_3$

RN 528853-06-7 HCA
CN 9H-Thioxanthenium, 2,4,5,7-tetramethyl-10-phenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA

INDEX NAME)

CM 1

CRN 528853-05-6
CMF C23 H23 S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

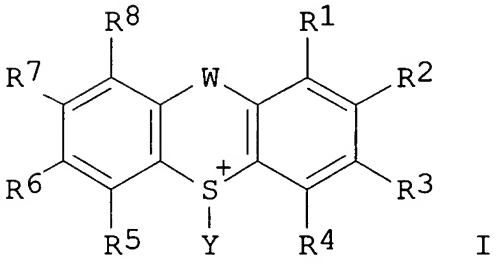
$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-004
ICS C07C025-18; C07C381-12; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST pos working resist compn **acid generator** chem amplified; electron beam resist compn pos working **acid generator**; x ray resist compn pos working **acid generator**; photoresist compn pos working **photoacid** generator semiconductor device fabrication
IT 144317-44-2 270563-93-4 270563-96-7 514846-95-8 514846-96-9
514846-98-1 **514847-00-8** 514847-02-0
514847-04-2 514847-06-4 514847-08-6 514847-10-0
514847-12-2 514847-15-5 **528853-06-7**
528853-07-8 528853-09-0 528853-11-4
(**acid generator**; pos.-working resist compn. showing excellent sensitivity, resoln., and pattern profile)
IT 153698-46-5P 514846-94-7P
(**acid generator**; pos.-working resist compn. showing excellent sensitivity, resoln., and pattern profile)
IT 258341-98-9P
(prepn. of **acid generator** for pos.-working resist compn. showing excellent sensitivity, resoln., and pattern profile)

IT 75-59-2, Tetramethylammonium hydroxide 832-53-1, Pentafluorobenzenesulfonylchloride 2049-95-8, tert-Amylbenzene 7758-05-6, Potassium iodate 10133-81-0, Thioxanthene 10 oxide 12027-06-4, Ammonium iodide 514846-93-6
(prepn. of **acid generator** for pos.-working resist compn. showing excellent sensitivity, resoln., and pattern profile)

L30 ANSWER 4 OF 9 HCA COPYRIGHT 2005 ACS on STN
138:346472 Negative-working chemically amplified electron beam or x-ray resist composition containing specific **acid generator**. Takahashi, Omote; Yasunami, Shoichiro; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003121999 A2 20030423, 42 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-315287 20011012.

GI



I

AB The title compn. contains an actinic ray- or radiation-sensitive **acid generator**, an alkali-solubilizable resin, and an acid-sensitive crosslinking agent, wherein the **acid generator** has structure I (W = -CH2-, -CYH-, -NH-; Y = aryl, alkyl; R1-8 = H, halo, OH, SH, nitro, etc.). The resist shows the high sensitivity and high resoln. and provides good pattern profile.

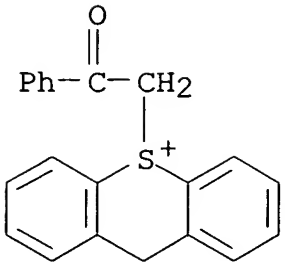
IT **514846-98-1 514847-00-8 514847-12-2**
(**acid generator** in resist compn.)

RN 514846-98-1 HCA

CN 9H-Thioxanthenium, 10-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 514846-97-0
CMF C21 H17 O S



CM 2

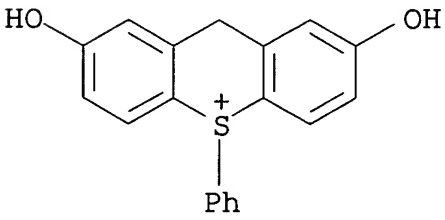
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 514847-00-8 HCA
CN 9H-Thioxanthenium, 2,7-dihydroxy-10-phenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 514846-99-2
CMF C19 H15 O2 S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

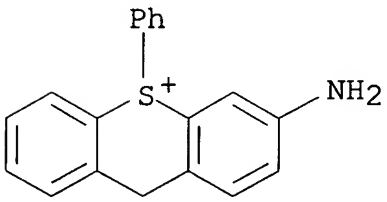
$^{-}O_3S-(CF_2)_3-CF_3$

RN 514847-12-2 HCA

CN 9H-Thioxanthenium, 3-amino-10-phenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 514847-11-1
CMF C19 H16 N S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

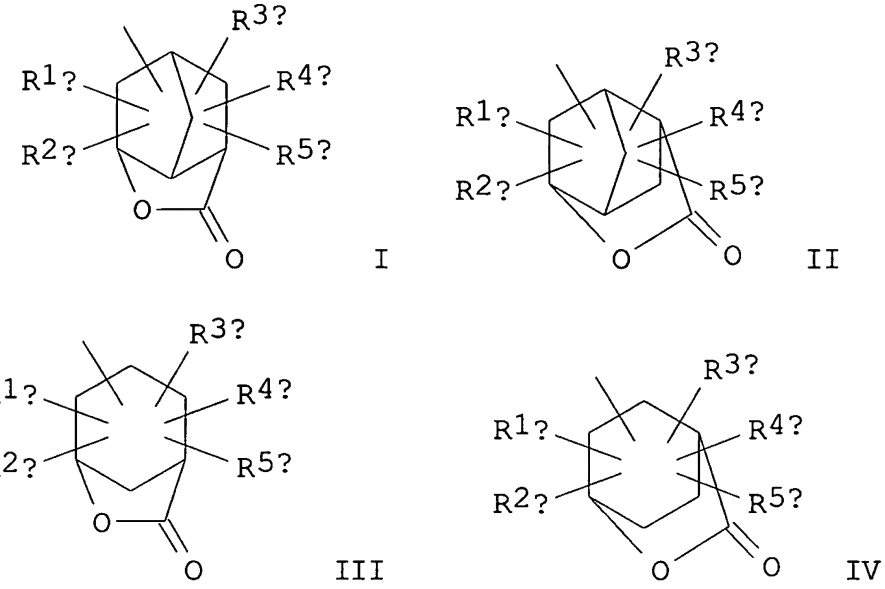
$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-004
ICS H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST neg electron beam x ray resist compn **acid generator**
IT Light-sensitive materials
(**acid-generator**)
IT 71-43-2, Benzene, reactions 75-59-2, Tetramethylammonium hydroxide 832-53-1, Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenylsulfoxide 10133-81-0, Thioxanthene, 10-oxide 153698-46-5 270563-93-4 270563-96-7 514846-93-6 514846-94-7 514846-95-8 514846-96-9 **514846-98-1 514847-00-8** 514847-02-0 514847-04-2 514847-06-4 514847-08-6 514847-10-0 **514847-12-2** 514847-14-4 514847-15-5 514847-17-7
(**acid generator** in resist compn.)
IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
(**acid generator** in resist compn.)

L30 ANSWER 5 OF 9 HCA COPYRIGHT 2005 ACS on STN
137:208381 Storage-stable chemically amplified UV positive photoresist compositions with good post-exposure stability for halftone

exposure. Sato, Kenichiro; Kodama, Kunihiko (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002251013 A2 20020906, 87 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-48880 20010223.

GI



AB The compns. comprise (A) resins contg. alicyclic hydrocarbon groups and groups selected from I, II, III, and IV (R1b, R2b, R3b, R4b, R5b = H, alkyl, cycloalkyl, alkenyl), which increase their alkali soly. by acid decompn. and (B) .gtoreq.2 **photoacid** generators selected from triarylsulfonium salts, phenacylsulfonium salts, and non-arom. sulfonium salts.

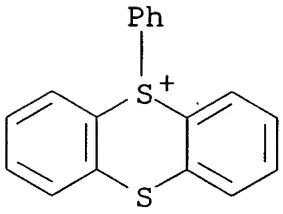
IT **442906-51-6**
(**photoacid** generator; storage-stable chem. amplified UV pos. photoresists with good post-exposure stability for halftone exposure)

RN 442906-51-6 HCA

CN Thianthrenium, 5-phenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47041-10-1
CMF C18 H13 S2



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-039
ICS C08F020-28; C08F032-04; C08F032-08; C08K005-36; C08L101-06; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST pos photoresist UV chem amplification halftone; phenacylsulfonium arylsulfonium **photoacid** generator UV photoresist; storage stability polycycloolefin photoresist excimer laser

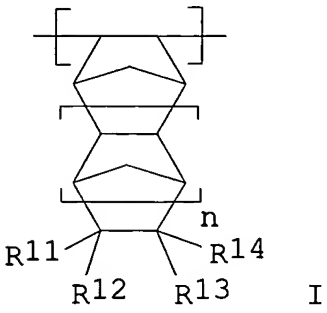
IT Sulfonium compounds
(arene, **photoacid** generator; storage-stable chem. amplified UV pos. photoresists with good post-exposure stability for halftone exposure)

IT Aromatic compounds
(sulfonium, **photoacid** generator; storage-stable chem. amplified UV pos. photoresists with good post-exposure stability for halftone exposure)

IT 66003-78-9 144089-15-6 144317-44-2 145612-66-4 160481-39-0
171292-12-9 177034-80-9 240424-21-9 241806-75-7 241806-76-8
258872-05-8 284474-28-8 301153-77-5 301153-78-6 301525-08-6
301664-71-1 301664-72-2 338445-24-2 338445-29-7 343629-51-6
347193-28-6 347193-29-7 371921-65-2 383367-32-6 389859-76-1
391232-40-9 398141-18-9 398141-19-0 398141-21-4 414911-37-8
414911-52-7 421555-72-8 **442906-51-6** 454471-05-7
454471-06-8 454471-07-9 454471-09-1 454471-11-5 454471-13-7
454471-15-9 454471-16-0 454471-17-1 454471-22-8 454471-23-9
454471-25-1 455521-76-3 455521-89-8
(**photoacid** generator; storage-stable chem. amplified UV pos. photoresists with good post-exposure stability for halftone exposure)

L30 ANSWER 6 OF 9 HCA COPYRIGHT 2005 ACS on STN
137:116950 Chemically amplified far-UV positive photoresists compositions with improved exposure margin and defocus latitude. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002202607 A2 20020719, 81 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-402246 20001228.

GI



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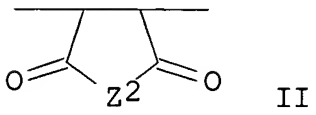


II

AB The resist compns. comprise (A) **photoacid** generators Q1Q2Q3S+X- [Q1-3 = (un)substituted phenyl; substituent = H, alkyl, alkoxy, OH, halo, SR; R = alkyl, aryl; X = RFSO3; RF = C.gtoreq.2-fluoroalkyl], X-Y1S+(Y2)Z1SZ2S+Y3Y4X- [Y1-4 = (un)substituted Ph (max. 2 substituents); Z1, Z2 = (un)substituted phenylene (max. 2 substituents); substituent, X = same as above], and Q4I+Q5X- [Q4, Q5 = (un)substituted phenyl; substituent, X = same as above] and (B) resins, which become alkali-sol. by acid decompn., comprising repeating units I (R11-14 = acid-decomposable group, H, halo, cyano, COOH, etc.; n = 0, 1), II (Z2 = O, NR41; R41 = H, OH, alkyl, haloalkyl, OSO2R42; R42 = alkyl, haloalkyl, etc.), and

CH2CR91COX5BR92 (R91 = H, lower alkyl, halo, CN; X5 = O, S, NR93, NR93SO2; R93 = H, alkyl; B = single bond, linking group; R92 = H, alkyl, alkoxy, OH, etc.).

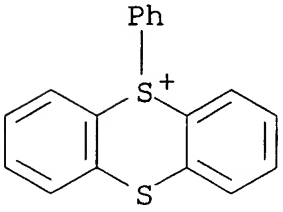
IT **442906-51-6**
(**photoacid** generator; far-UV pos. photoresists having sulfonium and iodonium **photoacid** generators with improved exposure margin and defocus latitude)

RN 442906-51-6 HCA

CN Thianthrenium, 5-phenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47041-10-1
CMF C18 H13 S2



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-039
ICS C08F220-00; C08F222-00; C08F232-00; C08K005-00; C08K005-16; C08K005-42; C08L033-00; C08L035-00; C08L045-00; G03F007-004; G03F007-033; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos photoresist far UV chem amplification; sulfonium iodonium **photoacid** generator UV photoresist

IT Positive photoresists
(UV; far-UV pos. photoresists having sulfonium and iodonium **photoacid** generators with improved exposure margin and defocus latitude)

IT 398140-88-0P, tert-Butyl norbornenecarboxylate-maleic anhydride-2-methyl-2-adamantyl acrylate-norbornenelacton acrylate copolymer

(far-UV pos. photoresists having sulfonium and iodonium **photoacid** generators with improved exposure margin and defocus latitude)

IT 398140-89-1 398140-90-4 398140-91-5 398140-92-6 398140-93-7
398140-94-8 398140-95-9 398140-97-1 398140-98-2 398140-99-3
398141-00-9 398141-03-2 398141-04-3 398141-06-5 398141-07-6
398141-08-7 398141-10-1 398141-11-2 398141-13-4 398141-14-5
398141-16-7 398152-52-8 405509-29-7 405509-30-0
(far-UV pos. photoresists having sulfonium and iodonium **photoacid** generators with improved exposure margin and defocus latitude)

IT 116808-67-4 133710-62-0 138529-84-7 144089-15-6 144317-44-2
171417-91-7 241806-75-7 241806-76-8 258872-05-8 284474-28-8
307531-76-6 312386-77-9 324771-13-3 338445-24-2 338445-29-7
338445-31-1 341548-84-3 341979-02-0 353264-90-1 391232-40-9
391232-41-0 406722-77-8 421555-73-9 442906-46-9 442906-47-0
442906-48-1 442906-49-2 442906-50-5 **442906-51-6**
(**photoacid** generator; far-UV pos. photoresists having sulfonium and iodonium **photoacid** generators with improved exposure margin and defocus latitude)

L30 ANSWER 7 OF 9 HCA COPYRIGHT 2005 ACS on STN
128:210861 Photoresist composition containing multiple arylsulfonium photoactive compounds, and formation of relief images using it. Sinta, Roger F.; Cameron, James F.; Adams, Timothy G.; Rajaratnam, Martha M.; Cronin, Michael F. (Shipley Co., L.L.C., USA). Jpn. Kokai Tokkyo Koho JP 10039500 A2 19980213 Heisei, 52 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-44543 19970124. PRIORITY: US 1996-590785 19960124.

AB In the title compn. comprising a resin binder and a photoactive component in an amt. sufficient to permit development of an exposed coating layer of the compn., the photoactive component comprises .gtoreq.2 aryl sulfonium photoactive compds. including .gtoreq.1 aryl sulfonium compd. having .gtoreq.2 cations. The relief image formation comprises the steps of applying a coating layer of the compn. on a substrate, exposing the layer to patterned activating radiation, and developing the exposed layer. An article of manuf. having on .gtoreq.1 surface a coating layer of the compn. is also claimed. The component is conveniently manufd. and the compns. useful as pos.- and neg.-working photoresists show high sensitivity toward deep UV rays and excellent microlithog. properties.

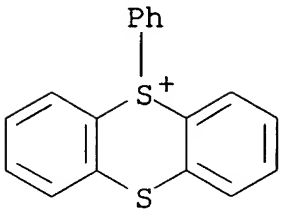
IT **195072-48-1P**
(photoresist compn. contg. arylsulfonium **photoacid generator**)

RN 195072-48-1 HCA

CN Thianthrenium, 5-phenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

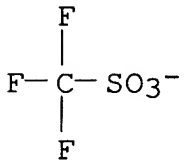
CM 1

CRN 47041-10-1
CMF C18 H13 S2



CM 2

CRN 37181-39-8
CMF C F3 O3 S



IC ICM G03F007-004
ICS G03C001-73; G03F007-038; G03F007-039; C07C381-12; C09K009-02
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST photoresist arylsulfonium **photoacid** generator
IT Photoresists
(photoresist compn. contg. arylsulfonium **photoacid generator**)
IT 3353-89-7P, Triphenylsulfonium bromide 13891-29-7P, Triphenylsulfonium tosylate 66003-78-9P 110928-18-2P 111281-12-0P 144089-15-6P 177786-98-0P 195072-47-0P **195072-48-1P** 195244-72-5P, Triphenylsulfonium 4-trifluoromethylbenzenesulfonate 203927-77-9P
(photoresist compn. contg. arylsulfonium **photoacid generator**)
IT 3379-81-5P 3393-78-0P, 4,4'-Dibromophenyl sulfide
(prepn. of arylsulfonium **photo-acid generator**)
IT 75-75-2, Methanesulfonic acid 100-58-3, Phenylmagnesium bromide 104-15-4, p-Toluenesulfonic acid, reactions 139-66-2, Diphenyl sulfide 945-51-7, Phenylsulfoxide 1493-13-6, Triflic acid 2795-39-3, Potassium perfluorooctane sulfonate 2991-42-6,

4-Trifluoromethylbenzene sulfonyl chloride 4270-70-6, Triphenylsulfonium chloride 4272-77-9 16836-95-6, Silver p-toluenesulfonate 66003-76-7, Diphenyliodonium triflate 203927-87-1
(prepn. of arylsulfonium **photo-acid generator**)

L30 ANSWER 8 OF 9 HCA COPYRIGHT 2005 ACS on STN
127:227331 Complex triarylsulfonium salts as **photoacid** generators for deep UV microlithography: synthesis, identification and lithographic characterization of key individual components. Cameron, James F.; Adams, Timothy; Orellana, Arturo J.; Rajaratnam, Martha M.; Sinta, Roger (Shipley Co., Res. Development Labs., Marlborough, MA, 01752, USA). Proceedings of SPIE-The International Society for Optical Engineering, 3049(Advances in Resist Technology and Processing XIV), 473-484 (English) 1997. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Sulfonium salts are evaluated as **photoacid** generators for deep-UV microlithog. The prepn. of triarylsulfonium salts from com. available triarylsulfonium chloride is described. Anal. of this class of **photoacid** generators revealed that it comprises a mixt. of triarylsulfonium cations. These materials are essentially complex mixts. derived from the various sulfonium cationic species which are present in the starting triarylsulfonium chloride. In order to better understand the unique properties of these **photoacid** generators, the authors focused on identifying the major triarylsulfonium cations present in the mixt. This paper describes the synthesis, identification and lithog. characterization of each of the components of this class of **photoacid** generators. The identity of each component was verified spectroscopically (1H and 13C NMR, IR and UV) and the compds. were also characterized by thermogravimetric anal. The **acid generating** efficiency of each component was detd. using Tetrabromophenol Blue as a spectrophotometric indicator dye. Lastly, full lithog. characterization of each component was performed and the results compared and contrasted with the triarylsulfonium mixts.

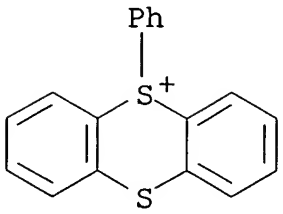
IT **195072-48-1P**, S-Phenylthioanthrylium trifluoromethanesulfonate
(triarylsulfonium sulfonium salts as **photoacid** generators for deep-UV microlithog.)

RN 195072-48-1 HCA

CN Thianthrenium, 5-phenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

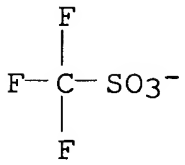
CM 1

CRN 47041-10-1
CMF C18 H13 S2



CM 2

CRN 37181-39-8
CMF C F3 O3 S



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST microlithog resist **photoacid** generator arylsulfonium salt; lithog photoresist arylsulfonium salt **photoacid** generator
IT UV and visible spectra
(characterization and prepn. of triarylsulfonium sulfonium salts as **photoacid** generators for deep-UV microlithog.)
IT Photoresists
(triarylsulfonium sulfonium salts as **photoacid** generators for deep-UV microlithog.)
IT 170780-41-3, Megaposit XP-9493
(characterization and prepn. of triarylsulfonium sulfonium salts as **photoacid** generators for deep-UV microlithog.)
IT 104-15-4, Toluenesulfonic acid, reactions 1493-13-6, Trifluoromethanesulfonic acid 3353-89-7, Triphenylsulfonium bromide 21324-39-0, Sodium hexafluorophosphate
(in prepn. of triarylsulfonium sulfonium salts as **photoacid** generators for deep-UV microlithog.)
IT 92-85-3, Thianthrene
(reaction with diphenyliodonium trimethanesulfonate in prepn. of triarylsulfonium salt as **photoacid** generator for deep UV microlithog.)
IT 13891-29-7P 57835-99-1P, Triphenylsulfonium hexafluorophosphate 66003-78-9P, Triphenylsulfonium trifluoromethanesulfonate

74227-35-3P 75482-18-7P, Diphenyl-4-thiophenoxyphenylsulfonium hexafluorophosphate 110928-18-2P 111281-12-0P, Diphenyl-4-thiophenoxyphenylsulfonium trifluoromethanesulfonate 177786-98-0P 195072-47-0P **195072-48-1P**, S-Phenylthioanthrylium trifluoromethanesulfonate
(triarylsulfonium sulfonium salts as **photoacid** generators for deep-UV microlithog.)

L30 ANSWER 9 OF 9 HCA COPYRIGHT 2005 ACS on STN

127:10932 Excited state carbon acids: irreversible photodeprotonation of the benzylic protons of 10-methyl- and 10-phenyl-thioxanthenium salts. Brousmiche, Darryl; Shukla, Deepak; Wan, Peter (Department of Chemistry, University of Victoria, Victoria, BC, V8W 3V6, Can.). Chemical Communications (Cambridge) (7), 709-710 (English) 1997. CODEN: CHCOFS. ISSN: 1359-7345. Publisher: Royal Society of Chemistry.

AB The first examples of irreversible photodeprotonation of a C-H bond to generate a formal carbanion, via photolysis of thioxanthenium salts, was reported, which gives the corresponding sulfonium ylide (thiaanthracene) and acid (HBF4 or HClO4). The pKas of the benzylic protons of these compds. were significantly lower than those of thioxanthene or dibenzosuberene. **Photoacid** prodn. from the intermediates arises from the excited-state carbon atom dissocn., which can be regarded as a new mechanism for prodn. of Bronsted acid from photolysis of triarylsulfonium salts.

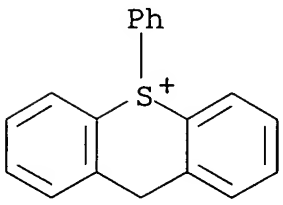
IT **53512-23-5**
(irreversible photodeprotonation of thioxanthenium salts to generate formal carbanions)

RN 53512-23-5 HCA

CN 9H-Thioxanthenium, 10-phenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

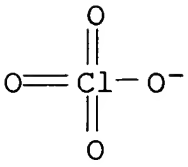
CRN 53512-22-4
CMF C19 H15 S



CM 2

CRN 14797-73-0

CMF Cl O4



CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 27

IT **53512-23-5** 53557-39-4 190314-17-1
(irreversible photodeprotonation of thioxanthenium salts to generate formal carbanions)

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L3             STR

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L6            32 S L1 AND L5
L7               SCR 2127
L8            31 S L1 AND L5 AND L7
L9         10154 S L1 AND L5 AND L7 FUL
               SAV L9 LEE842/A

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               SAV L15 LEE842A/A
L16           41 S L10 SSS SAM SUB=L9
L17          872 S L10 SSS FUL SUB=L9
               SAV L17 LEE842B/A
L18            0 S L12 SSS SAM SUB=L9
L19              STR L12
L20            0 S L19 SSS SAM SUB=L9
L21            0 S L19 SSS FUL SUB=L9
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L26             9 S L24

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L27           377 S L17 AND L15

     FILE 'HCA' ENTERED AT 15:54:51 ON 03 FEB 2005
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L29         21480 S PHOTOACID# OR PHOTOGENERAT? OR PHOTO(2A)(ACID# OR GENER
L30             9 S L28 AND L29
L31          2277 S L15
L32           269 S L31 AND L29

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L35             0 S L33 AND L34
L36            56 S YUEH W?/AU
L37            13 S PUTNA E?/AU
L38             7 S (L36 OR L37) AND L29
                  SEL L38 1-7 RN

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L40             0 S L39 AND L9
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L42             6 S L39 AND S/ELS

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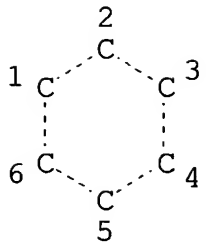


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 +1      +1
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DEFAULT ECLEVEL IS LIMITED

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RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
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L7 SCR 2127
L9 10154 SEA FILE=REGISTRY SSS FUL L1 AND L5 AND L7
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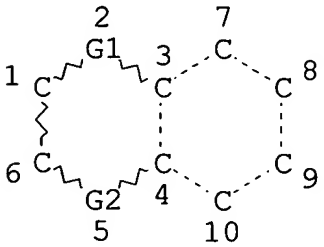

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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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FILE COVERS 1907-1966
FILE LAST UPDATED: 01 May 1997 (19970501/UP)

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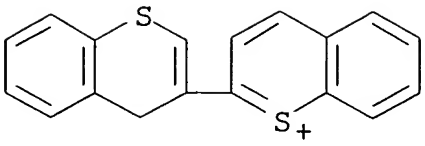
L25 ANSWER 1 OF 1 CAOLD COPYRIGHT 2005 ACS on STN
AN CA60:13352a CAOLD
TI polymethine dyes with the 4,5-(2'-methyl-5',-4'-thiazolo)thiazole residue
AU Shumelyak, G. P.; Al'perovich, M. A.
IT 2629-87-0 51265-37-3 90345-41-8 97195-14-7 97529-16-3 97863-96-2 **100264-58-2** 101656-74-0 107012-09-9
IT **100264-58-2**
RN 100264-58-2 CAOLD
CN 1-Benzothiopyrylium, 2-(4H-1-benzothiopyran-3-yl)-, perchlorate (9CI) (CA INDEX NAME)

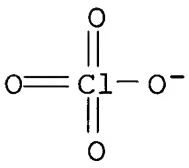
CM 1

CRN 100264-57-1
CMF C18 H13 S2



CM 2

CRN 14797-73-0
CMF Cl O4



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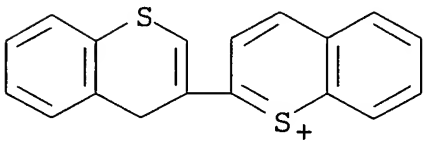
=> d l26 1-9 ibib abs hitstr hitrn

L26 ANSWER 1 OF 9 ZCA COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 141:23351 ZCA
TITLE: Product class 7: benzothiopyrylium salts
AUTHOR(S): Rudorf, W.-D.
CORPORATE SOURCE: Germany
SOURCE: Science of Synthesis (2003), 14, 719-770
CODEN: SSCYJ9
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Methods of prepg. benzothiopyrylium salts, including cyclization, aromatization, and substituent modifications methods are reviewed.
IT **100264-58-2P**
(review of prepn. of benzothiopyrylium salts via cyclization,

aromatization, and substituent modification methods)
RN 100264-58-2 ZCA
CN 1-Benzothiopyrylium, 2-(4H-1-benzothiopyran-3-yl)-, perchlorate (9CI) (CA INDEX NAME)

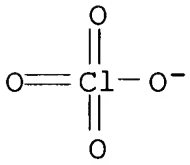
CM 1

CRN 100264-57-1
CMF C18 H13 S2



CM 2

CRN 14797-73-0
CMF Cl O4



IT **100264-58-2P**
(review of prepn. of benzothiopyrylium salts via cyclization, aromatization, and substituent modification methods)
REFERENCE COUNT: 145 THERE ARE 145 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 9 ZCA COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 139:337953 ZCA
TITLE: Triflic anhydride-promoted cyclization of sulfides: A convenient synthesis of fused sulfur heterocycles
AUTHOR(S): Shevchenko, Nikolay E.; Nenajdenko, Valentine G.; Balenkova, Elizabeth S.
CORPORATE SOURCE: Department of Chemistry, Moscow State University, Moscow, 119992, Russia
SOURCE: Synthesis (2003), (8), 1191-1200
CODEN: SYNTBF; ISSN: 0039-7881
PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:337953

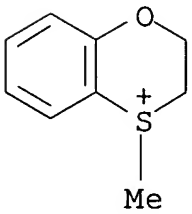
AB A new approach to the synthesis of annulated sulfur heterocycles based on triflic anhydride-promoted cyclization of the heteroaryl(aryl) contg. alkyl sulfides was elaborated. Smooth demethylation of initially formed cyclic sulfonium salts by treatment with triethylamine afforded a no. of five-, six- and seven-membered fused sulfur heterocycles. Unexpected ring opening took place in the reaction of diethylamine with 5-membered sulfonium salts. For example, treatment of 2-methyl-5-[2-(methylthio)ethyl]thiophene with triflic anhydride gave 2,3-dihydro-1,5-dimethylthieno[3,2-b]thiophen-1-ium trifluoromethanesulfonate. Demethylation of the latter gave 2,3-dihydro-5-methylthieno[3,2-b]thiophene and a ring-opened product, N,N-dimethyl-5-methyl-3-(methylthio)-2-thiopheneethanamine. Compds. thus prepd. also included 2,3-dihydrothieno[2,3-b]thiophene, 2,3-dihydrothieno[3,2-b]benzo[b]thiophene, 3,4-dihydro-4-methyl-2H-thieno[3,2-b]indole, 3,4-dihydro-2H-Thiopyrano[3,2-b]benzo[b]thiophene, 6,7-dihydro-2-methyl-5H-thieno[3,2-b]thiopyran, 2,3,4,5-tetrahydro-5-methylthiopyrano[3,2-b]indole, 2,3-dihydropyrrolo[2,1-b]thiazole, 3,4-dihydro-2H-Pyrrolo[2,1-b][1,3]thiazine, 1,2-dihydro[1,4]thiazino[2,3,4-jk]carbazole, 6,7-dihydro-5H-[1,4]thiazepino[2,3,4-jk]carbazole, 2,3-dihydro-1,4-benzoxathiin, 2,3-dihydronaphth[2,1-b][1,4]oxathiin, 2,3-dihydronaphth [1,2-b]-1,4-oxathiin.

IT **616863-10-6P**
(prepn. of fused sulfur heterocyclic compds. via triflic anhydride-promoted cyclization of sulfides)

RN 616863-10-6 ZCA
CN 1,4-Benzoxathiinium, 2,3-dihydro-4-methyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

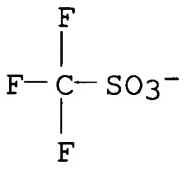
CM 1

CRN 616863-09-3
CMF C9 H11 O S



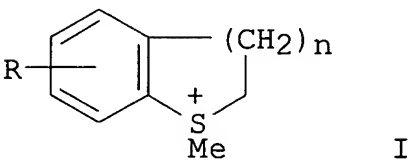
CM 2

CRN 37181-39-8
CMF C F3 O3 S



IT **616863-10-6P**
(prepn. of fused sulfur heterocyclic compds. via triflic anhydride-promoted cyclization of sulfides)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 9 ZCA COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 126:277376 ZCA
TITLE: Activation of sulfoxides with triflic anhydride. Synthesis of aryldialkylsulfonium salts and sulfur heterocycles
AUTHOR(S): Nenajdenko, Valentine G.; Vertelezkij, Pavel V.; Balenkova, Elizabeth S.
CORPORATE SOURCE: Dep. Chemistry, Moscow State Univ., Moscow, RUS-119899, Russia
SOURCE: Sulfur Letters (1996), 20(2), 75-84
CODEN: SULED2; ISSN: 0278-6117
PUBLISHER: Harwood
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB A one-pot synthesis of aryldimethylsulfonium salts RC6H4S+Me2 (R = H, 2-, 4-Me, 2,4-Me2, 4-PhO, etc.) by the reaction of "dimethyl sulfide ditriflate" with less active arenes is described. The reaction proceeds regioselectively, preferentially p-isomers are formed. The possibility of intramol. cyclization of sulfoxides

having arylethyl, phenylpropyl and phenylbutyl fragments has been shown. As a result 5-, 6- and 7-membered cyclic methylsulfonium salts I (R = H, 2-, 4-Me, n = 1; R = H, n = 2, 3) are formed in high yields. Demethylation of cyclic sulfonium salts with diethylamine gives rise to the corresponding sulfur benzoheterocycles.

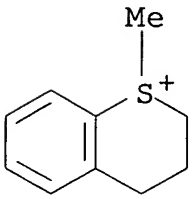
IT **188954-44-1P**
(prepn. of aryldimethylsulfonium salts and sulfur heterocycles)

RN 188954-44-1 ZCA

CN 2H-1-Benzothiopyranium, 3,4-dihydro-1-methyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

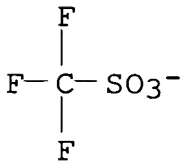
CM 1

CRN 82135-96-4
CMF C10 H13 S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



IT **188954-44-1P**
(prepn. of aryldimethylsulfonium salts and sulfur heterocycles)

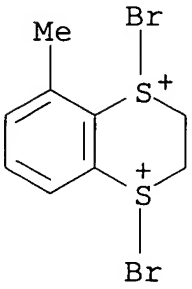
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 4 OF 9 ZCA COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 120:243734 ZCA
TITLE: Chemistry of ethanediyl S,S-acetals. 6. An example of vicarious nucleophilic substitution of hydrogen in 1,4-benzodithians

AUTHOR(S): Caputo, Romualdo; De Nisco, Mauro; Palumbo, Giovanni; Adamo, Carlo; Barone, Vincenzo
CORPORATE SOURCE: Dip. Chim. Org. Biol., Univ. Naples, I-80134, Italy
SOURCE: Tetrahedron (1993), 49(48), 11383-8
CODEN: TETRAB; ISSN: 0040-4020
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 120:243734
AB 1,4-Benzodithians, when treated with bromine in anhyd. chloroform, undergo very fast monobromination at the arom. ring. The substitution of bromine on the arom. ring is regioselective, the bromine atom being invariably at one of the ring positions ortho to the sulfur atoms. By the use of frontier AM1 quantum mech. semiempirical calcns., the reaction is shown to proceed most likely via a vicarious nucleophilic substitution of hydrogen.

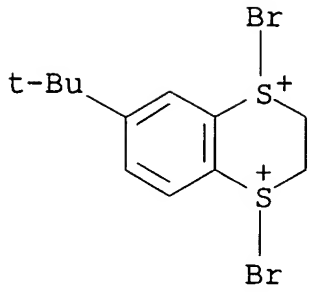
IT **154407-57-5 154407-58-6 154407-59-7 154407-60-0 154407-61-1**
(AM1 LUMO coeffs. and net at. charge, intermediate)

RN 154407-57-5 ZCA
CN 1,4-Benzodithiinium, 1,4-dibromo-2,3-dihydro-5-methyl-, dibromide (9CI) (CA INDEX NAME)



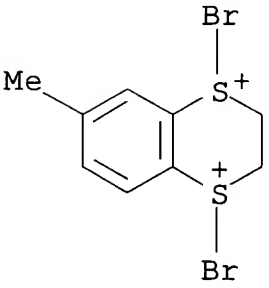
●2 Br^-

RN 154407-58-6 ZCA
CN 1,4-Benzodithiinium, 1,4-dibromo-6-(1,1-dimethylethyl)-2,3-dihydro-, dibromide (9CI) (CA INDEX NAME)



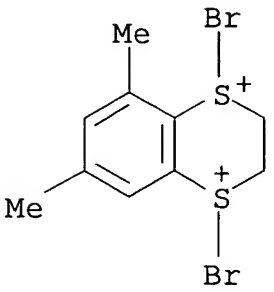
●2 Br^-

RN 154407-59-7 ZCA
CN 1,4-Benzodithiinium, 1,4-dibromo-2,3-dihydro-6-methyl-, dibromide (9CI) (CA INDEX NAME)



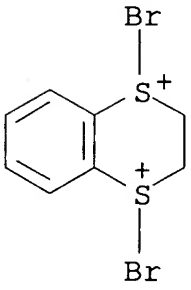
●2 Br^-

RN 154407-60-0 ZCA
CN 1,4-Benzodithiinium, 1,4-dibromo-2,3-dihydro-5,7-dimethyl-, dibromide (9CI) (CA INDEX NAME)



●2 Br^-

RN 154407-61-1 ZCA
CN 1,4-Benzodithiinium, 1,4-dibromo-2,3-dihydro-, dibromide (9CI) (CA INDEX NAME)



●2 Br^-

IT **154407-57-5 154407-58-6 154407-59-7**
154407-60-0 154407-61-1
(AM1 LUMO coeffs. and net at. charge, intermediate)

L26 ANSWER 5 OF 9 ZCA COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 113:58607 ZCA
TITLE: Synthesis and absolute configurations of optically active oxosulfonium salts
AUTHOR(S): Takeuchi, Hiroyuki; Minato, Hiroshi; Kobayashi, Michio; Yoshida, Masato; Matsuyama, Haruo; Kamigata, Nobumasa
CORPORATE SOURCE: Fac. Sci., Tokyo Metrop. Univ., Tokyo, 158, Japan

SOURCE: Phosphorus, Sulfur and Silicon and the Related Elements (1990), 47(1-2), 165-72
CODEN: PSSLEC; ISSN: 1042-6507
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 113:58607

AB Optically active aryl Et Me oxosulfonium perchlorates were prepd. by the oxidn. of the corresponding sulfonium salts with sodium perbenzoate. The abs. configurations of oxosulfonium salts were detd. by converting them into aryl Et sulfoxides. The CD spectra of optically active oxosulfonium perchlorates with (+)-(R) configuration show a pos. strong Cotton effect at ca. 230 nm and a pos. weak one at ca. 260 nm. Whereas, the CD spectra of optically active oxosulfonium perchlorates with (-)-(S) configuration show a neg. strong Cotton effect at ca. 230 nm and a neg. one at ca. 260 nm.

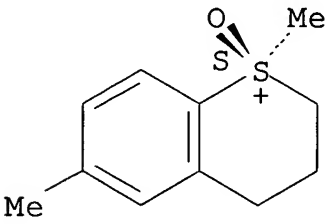
IT **128092-52-4P**
(prepn. and optical resoln. of)

RN 128092-52-4 ZCA
CN 2H-1-Benzothiopyranium, 3,4-dihydro-1,6-dimethyl-, (1S)-, perchlorate, 1-oxide (9CI) (CA INDEX NAME)

CM 1

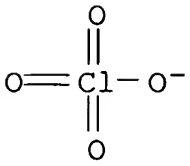
CRN 128092-51-3
CMF C11 H15 O S

Absolute stereochemistry.



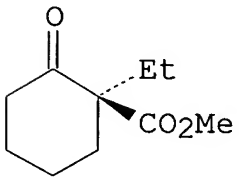
CM 2

CRN 14797-73-0
CMF Cl O4

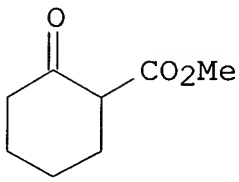


IT **128092-52-4P**
(prepn. and optical resoln. of)

L26 ANSWER 6 OF 9 ZCA COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 110:212308 ZCA
TITLE: Asymmetric alkylation of .beta.-keto esters with optically active sulfonium salts
AUTHOR(S): Umemura, Kazuyuki; Matsuyama, Haruo; Watanabe, Nobuko; Kobayashi, Michio; Kamigata, Nobumasa
CORPORATE SOURCE: Fac. Sci., Tokyo Metrop. Univ., Tokyo, 158, Japan
SOURCE: Journal of Organic Chemistry (1989), 54(10), 2374-83
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 110:212308
GI



II



III

AB Alkylation of the cyclic .beta.-keto ester 2-(methoxycarbonyl)-1-indanone (I) with racemic alkylsulfonium salts gave 2-alkylindanones in 60-96% yields. The relative reactivities of the alkyl substituents of ethyl(methyl)phenylsulfonium perchlorate and isopropyl(methyl)phenylsulfonium perchlorate were quite different from those in SN2 alkylations. Asym. induction occurred upon alkylation of I with optically active sulfonium salts. (S)-2-Ethyl-2-(methoxycarbonyl)cyclohexanone (II) was obtained in up to 16% ee by alkylation of the enolate ion of 2-(methoxycarbonyl)cyclohexanone (III), with optically active (R)-(+)-(p-chlorophenyl)ethylmethylsulfonium d-10-camphorsulfonate.

Alkylation of the enolate ion of I with sulfonium salts contg. optically active alkyl groups afforded C-alkylated products with inversion of configuration at the asym. alkyl carbon atom. These alkylations appear to proceed via an S-O sulfurane intermediate or a tight ion pair with subsequent stereoselective alkyl migration to the enolate.

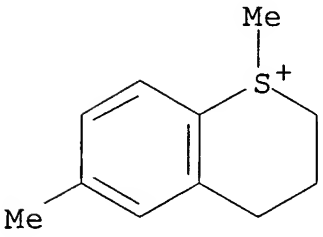
IT **119695-46-4**
(alkylation by, of methoxycarbonylindanone)

RN 119695-46-4 ZCA

CN 2H-1-Benzothiopyranium, 3,4-dihydro-1,6-dimethyl-, perchlorate (9CI) (CA INDEX NAME)

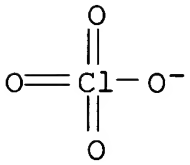
CM 1

CRN 119695-45-3
CMF C11 H15 S



CM 2

CRN 14797-73-0
CMF Cl O4



IT **119785-64-7**
(asym. alkylation by, of methoxycarbonylindanone)

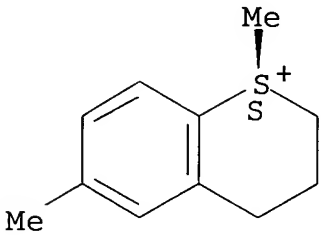
RN 119785-64-7 ZCA

CN 2H-1-Benzothiopyranium, 3,4-dihydro-1,6-dimethyl-, salt with (1S)-7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 119785-63-6
CMF C11 H15 S

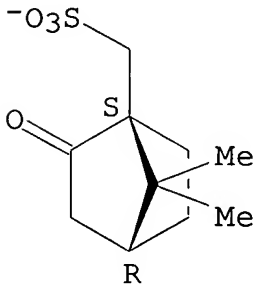
Absolute stereochemistry.



CM 2

CRN 46362-90-7
CMF C10 H15 O4 S

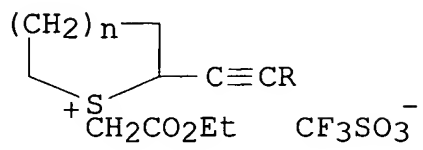
Absolute stereochemistry.



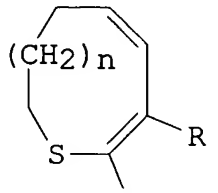
IT **119695-46-4**
(alkylation by, of methoxycarbonylindanone)
IT **119785-64-7**
(asym. alkylation by, of methoxycarbonylindanone)

L26 ANSWER 7 OF 9 ZCA COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 107:7054 ZCA
TITLE: Thermal rearrangements of cyclic amine ylides. Part VI. Ring expansion of cyclic .alpha.-ethynyl sulfonium ylides by [2,3]-sigmatropic rearrangement: formation of thiocin, thionin, and thiecin derivatives
AUTHOR(S): Sashida, Haruki; Tsuchiya, Takashi
CORPORATE SOURCE: Sch. Pharm., Hokuriku Univ., Kanazawa, 920-11,

Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1986), 34(9), 3644-52
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 107:7054
GI



I



II

AB The cyclic sulfonium salts I (n = 1, 2, 3; R = Me, Bu, Ph, H), prepd. from the thiolane, thiane, and thiepane were treated with DBU to result in ring expansion, giving thiocins II (n = 1), thionins II (n = 2), and thiecins II (n = 3), resp., presumably via the allenic intermediates derived from the initially formed sulfonium ylides by [2,3]-sigmatropic rearrangement.

IT **108277-73-2P 108277-75-4P 108277-77-6P**
108277-79-8P 108277-81-2P 108277-83-4P
(prepn. and ring expansion of)

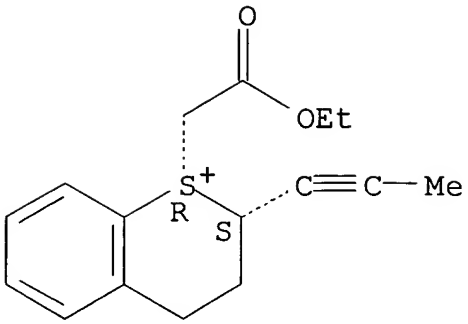
RN 108277-73-2 ZCA

CN 2H-1-Benzothiopyranium, 1-(2-ethoxy-2-oxoethyl)-3,4-dihydro-2-(1-propynyl)-, cis-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

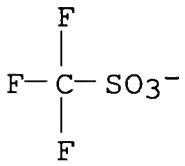
CRN 108277-72-1
CMF C16 H19 O2 S

Relative stereochemistry.



CM 2

CRN 37181-39-8
CMF C F3 O3 S

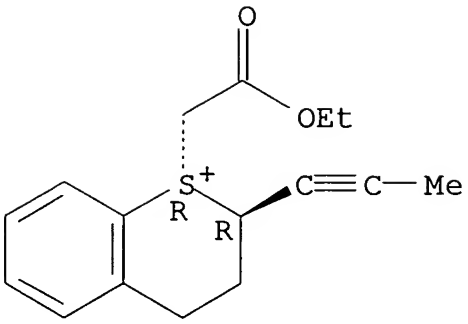


RN 108277-75-4 ZCA
CN 2H-1-Benzothiopyranium, 1-(2-ethoxy-2-oxoethyl)-3,4-dihydro-2-(1-propynyl)-, trans-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

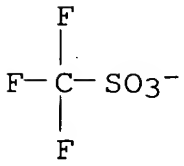
CRN 108277-74-3
CMF C16 H19 O2 S

Relative stereochemistry.



CM 2

CRN 37181-39-8
CMF C F3 O3 S

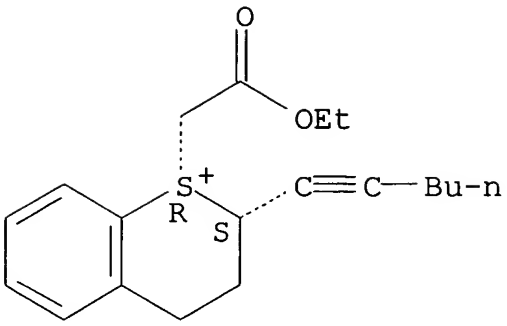


RN 108277-77-6 ZCA
CN 2H-1-Benzothiopyranium, 1-(2-ethoxy-2-oxoethyl)-2-(1-hexynyl)-3,4-dihydro-, cis-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

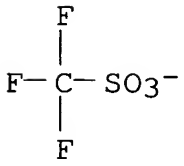
CRN 108277-76-5
CMF C19 H25 O2 S

Relative stereochemistry.



CM 2

CRN 37181-39-8
CMF C F3 O3 S

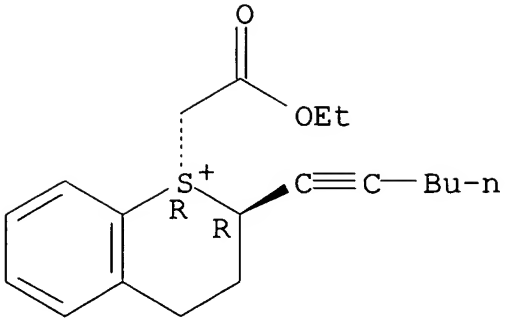


RN 108277-79-8 ZCA
CN 2H-1-Benzothiopyranium, 1-(2-ethoxy-2-oxoethyl)-2-(1-hexynyl)-3,4-dihydro-, trans-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

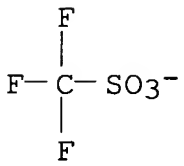
CRN 108277-78-7
CMF C19 H25 O2 S

Relative stereochemistry.



CM 2

CRN 37181-39-8
CMF C F3 O3 S

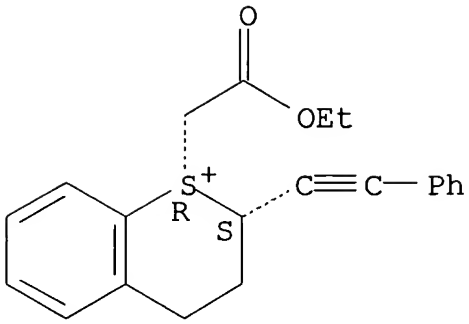


RN 108277-81-2 ZCA
CN 2H-1-Benzothiopyranium, 1-(2-ethoxy-2-oxoethyl)-3,4-dihydro-2-(phenylethynyl)-, cis-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

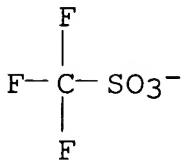
CRN 108277-80-1
CMF C21 H21 O2 S

Relative stereochemistry.



CM 2

CRN 37181-39-8
CMF C F3 O3 S

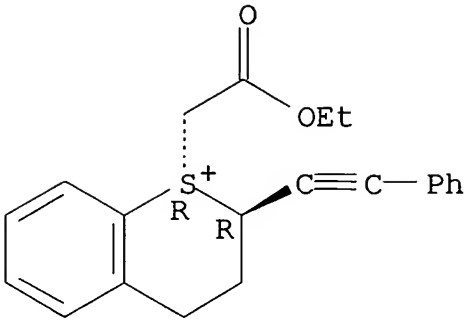


RN 108277-83-4 ZCA
CN 2H-1-Benzothiopyranium, 1-(2-ethoxy-2-oxoethyl)-3,4-dihydro-2-(phenylethynyl)-, trans-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

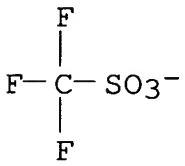
CRN 108277-82-3
CMF C21 H21 O2 S

Relative stereochemistry.



CM 2

CRN 37181-39-8
CMF C F3 O3 S



IT **108277-73-2P 108277-75-4P 108277-77-6P**
108277-79-8P 108277-81-2P 108277-83-4P
(prepn. and ring expansion of)

L26 ANSWER 8 OF 9 ZCA COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 97:71758 ZCA
TITLE: One-electron chemical reductions of phenylalkylsulfonium salts
AUTHOR(S): Beak, Peter; Sullivan, Thomas A.
CORPORATE SOURCE: Dep. Chem., Univ. Illinois, Urbana, IL, 61801, USA
SOURCE: Journal of the American Chemical Society (1982), 104(16), 4450-7
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 97:71758

AB Twenty-two arylalkylsulfonium salts have been reduced with K in graphite in THF and the sulfide products identified. Two trialkylsulfonium salts did not reduce under these conditions. Comparison of the sulfides from a series of monophenylalkylsulfonium salts reveals a leaving-group propensity of benzyl > secondary >

primary > Me > Ph in a ratio of 28:(6.0 .+-. 0.3):1.0:(0.53 .+-. 0.09):<0.05. The cleavage ratio is shown to be independent of the electron source and the homogeneity or heterogeneity of the reaction in two cases. Multiplicative transitivity of the above ratios is not obsd., although the same qual. order is found for other comparisons. These results are interpreted in terms of the initial formation of a .pi.-ligand .pi.-radical anion sulfonium cation, which undergoes cleavage to a carbon radical and a sulfide. This appears to be the first evidence for this type of structure in a sulfur system. Leaving group propensities different from the above order are obsd. in redns. of diphenylsulfonium and benzo-fused sulfonium salts, and rationales are offered. The intermediates in these reactions appear to be different from those involved in radical addns. to, or displacements on, sulfur.

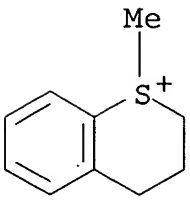
IT **82135-97-5P**
(prepn. and 1-electron redn. of, mechanism of)

RN 82135-97-5 ZCA

CN 2H-1-Benzothiopyranium, 3,4-dihydro-1-methyl-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

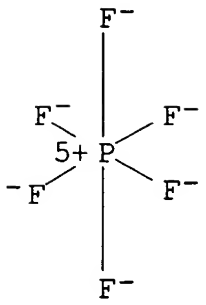
CM 1

CRN 82135-96-4
CMF C10 H13 S



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

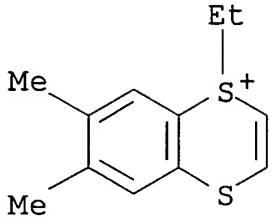


IT **82135-97-5P**
(prepn. and 1-electron redn. of, mechanism of)

L26 ANSWER 9 OF 9 ZCA COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 73:114791 ZCA
TITLE: 1-Ethyl-1,4-dithiinium fluoroborate and related bonding systems
AUTHOR(S): Schroth, Werner; Hassfeld, Manfred; Zschunke, Adolf
CORPORATE SOURCE: Sekt. Chem., Martin-Luther-Univ., Halle/Saale, Fed. Rep. Ger.
SOURCE: Zeitschrift fuer Chemie (1970), 10(8), 296-7
CODEN: ZECEAL; ISSN: 0044-2402
DOCUMENT TYPE: Journal
LANGUAGE: German
GI For diagram(s), see printed CA Issue.
AB For the cations of I-IV, the d.pi.-p.pi. resonance structure (V) is proposed (4-ethylthiathiopyrylium cations) in which the pos. charge is localized on the S atom in the 4 position and an aromatic 6-.pi.-electron system is present. Treatment of I-IV with excess Et3O+BF4- did not result in 1,4-diethyl derivs. NMR spectra of I and II each exhibited 2 similar olefinic-proton doublets (at 6.82 and 8.36 ppm in I, at 6.76 and 8.04 ppm in II relative to Me4Si, J = 10 Hz for both). The doublet near 8 ppm is attributed to protons .beta. to the .sigma.-trivalent sulfonium S; the doublet near 6.8 ppm, to .alpha.-protons.
IT **29893-52-5 29893-53-6**
(electron delocalization in, N.M.R. in relation to)
RN 29893-52-5 ZCA
CN 1,4-Benzodithiinium, 1-ethyl-6,7-dimethyl-, tetrafluoroborate(1-) (8CI) (CA INDEX NAME)

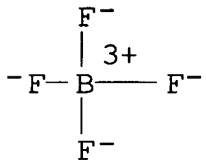
CM 1

CRN 46271-50-5
CMF C12 H15 S2



CM 2

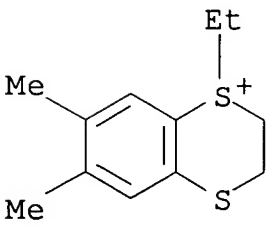
CRN 14874-70-5
CMF B F4
CCI CCS



RN 29893-53-6 ZCA
CN 1,4-Benzodithianium, 1-ethyl-6,7-dimethyl-, tetrafluoroborate(1-) (8CI) (CA INDEX NAME)

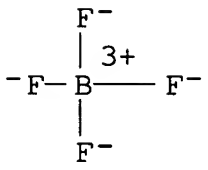
CM 1

CRN 46271-49-2
CMF C12 H17 S2



CM 2

CRN 14874-70-5
CMF B F4
CCI CCS



IT **29893-52-5 29893-53-6**
(electron delocalization in, N.M.R. in relation to)

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L8            31 S L1 AND L5 AND L7
L9         10154 S L1 AND L5 AND L7 FUL
               SAV L9 LEE842/A

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               SAV L15 LEE842A/A
L16           41 S L10 SSS SAM SUB=L9
L17          872 S L10 SSS FUL SUB=L9
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L25           1 S L24

     FILE 'ZCA' ENTERED AT 15:46:14 ON 03 FEB 2005
L26           9 S L24

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L27         377 S L17 AND L15

     FILE 'HCA' ENTERED AT 15:54:51 ON 03 FEB 2005
L28          92 S L27
L29       21480 S PHOTOACID# OR PHOTOGENERAT? OR PHOTO(2A)(ACID# OR GENER
L30           9 S L28 AND L29
L31        2277 S L15
L32         269 S L31 AND L29

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L33         230 S YUEH ?/AU
L34          28 S PUTNA ?/AU
L35           0 S L33 AND L34
L36          56 S YUEH W?/AU
L37          13 S PUTNA E?/AU
L38           7 S (L36 OR L37) AND L29
                SEL L38 1-7 RN

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L39          42 S E1-E42
L40           0 S L39 AND L9
L41           0 S L39 AND I/ELS
L42           6 S L39 AND S/ELS

     FILE 'HCA' ENTERED AT 16:16:28 ON 03 FEB 2005
L43      157614 S RESIST OR RESISTS OR PHOTORESIST? OR MASK? OR PHOTOMASK
L44         242 S L32 AND L43
L45       23232 S PHOTOLITHO? OR PHOTO(2A)LITHO?
L46          36 S L44 AND L45
                SEL L46 1-36 HIT RN

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     FILE 'REGISTRY' ENTERED AT 16:26:24 ON 03 FEB 2005


=> d l15 que stat
L1              STR
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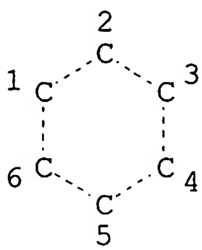

@7 I +1 @9 S +1 G1 11

VAR G1=7/9
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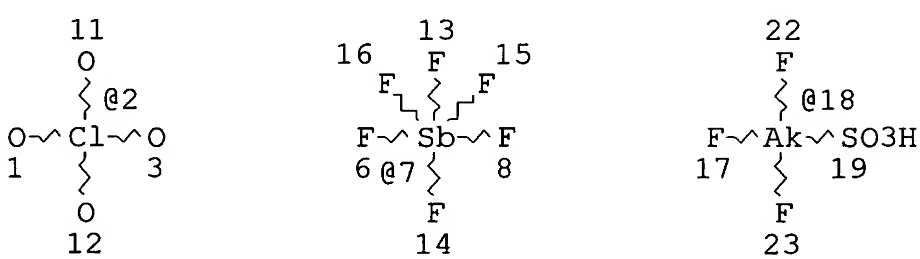
CHARGE IS E+1 AT 7
CHARGE IS E+1 AT 9
NSPEC IS R AT 7
NSPEC IS R AT 9
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
L3 STR



G1 21

VAR G1=2/7/18
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE
L5 SCR 2040 AND 1838
L7 SCR 2127
L9 10154 SEA FILE=REGISTRY SSS FUL L1 AND L5 AND L7
L15 3716 SEA FILE=REGISTRY SUB=L9 SSS FUL L1 AND L3 AND L5 AND L7

100.0% PROCESSED 3778 ITERATIONS 3716 ANSWERS
SEARCH TIME: 00.00.01

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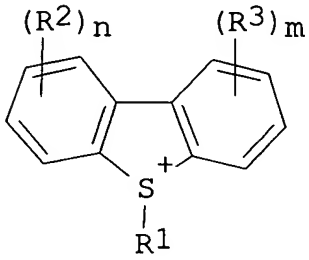
=> d l46 1-36 cbib abs hitstr hitind

L46 ANSWER 1 OF 36 HCA COPYRIGHT 2005 ACS on STN
142:103154 **Photoacid** generators. Houlihan, Francis M.; Toukhy, Medhat A.; Mullen, Salem K. (USA). U.S. Pat. Appl. Publ. US 2004265733 A1 20041230, 8 pp. (English). CODEN: USXXCO.
APPLICATION: US 2003-609735 20030630.
GI



I

AB A compn. useful for forming a **photoresist** layer at i-line (365 nm) comprises: (a) a film forming resin; (b) a compd. represented by the following formula I (R1 = C1-20-alkyl, C6-20-aryl, C6-20-aralkyl, which cab be unsubstituted or substituted by one or more groups selected from halogen, C1-20-alkyl, C18-perfluoroalkyl, C1-20-alkoxy, cyano, hydroxyl, or nitro; R2, R3

= H, C1-8-alkyl, C1-8-perfluoroalkyl, C1-8-alkoxy, nitro, halogen, carboxyl, hydroxyl, and sulfate; m, n = 0, pos. integer; X- = non-nucleophilic anion of an acid); (c) optionally, additives to adjust the optical, mech. and film forming properties; (d) optionally, a base or radiation sensitive base; and (e) a solvent. Applicants have now found that certain perfluoroalkyl onium salts useable at lower wavelengths (e.g., 193 nm and 157 nm), can now also be used at longer wavelengths, for example i-line (365 nm). Such a finding is unexpected since most **photoresist** compns. do not use a chem. amplified system at these wavelengths.

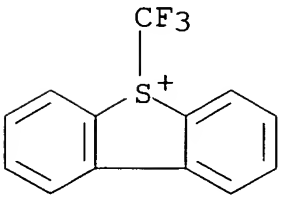
IT **578741-92-1**
(**photoacid** generator; **photoacid** generators and **photoresist** compns.)

RN 578741-92-1 HCA

CN Dibenzothiophenium, 5-(trifluoromethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 129946-87-8
CMF C13 H8 F3 S



CM 2

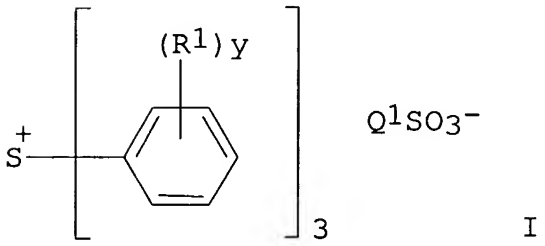
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-004
NCL 430270100; 430322000; 430330000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **photoresist photoacid** generator
IT Phenolic resins, uses
(novolak, cresol-based; **photoacid** generators and **photoresist** compns.)

IT **Photolithography**
Photoresists
(**photoacid** generators and **photoresist** compns.)
IT **578741-92-1**
(**photoacid** generator; **photoacid** generators and **photoresist** compns.)
IT 170636-47-2, tert-Butylacrylate-hydroxystyrene-styrene copolymer 817621-02-6
(**photoacid** generators and **photoresist** compns.)
IT 29420-49-3, Potassium nonaflate 131880-16-5
(synthesis of **photoacid** generator for **photoresist** compns.)

L46 ANSWER 2 OF 36 HCA COPYRIGHT 2005 ACS on STN
142:82299 Chemically amplified **photoresist** layer with .ltoreq.350 nm thickness and its preparation. Takahashi, Omote; Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004361819 A2 20041224, 58 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-162293 20030606.
GI



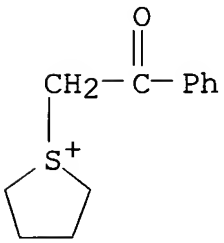
I

AB A chem. amplified **photoresist** layer, after a pre-exposure heating process (for 60-90 s at 100-130.degree.), has a layer thickness of .ltoreq.300 nm (preferably 50-200 nm) and a solvent residue amt. of 2.0-10.0 vol.%. The **photoresist** layer comprises (A) a resin having an alicyclic hydrocarbyl structure and increasing an alkali-soly. upon an acid action, and (B) a **photoacid** generator represented by I [R1 = alkyl, alicyclic hydrocarbyl, OH, carboxyl, alkoxy, halo; y = 0-5; Q1 = fluoroalkyl, fluoroaryl, fluoroalkyl-substituted aryl]. The **photoresist** film shows improved resoln. and line-edge roughness.
IT **301664-72-2**
(**photoacid** generator; chem. amplified **photoresist** layer with .ltoreq.350 nm thickness to have improved resoln. and line-edge roughness and its prepn.)

RN 301664-72-2 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 45298-90-6
CMF C8 F17 O3 S

$^{-}O_3S-(CF_2)_7-CF_3$

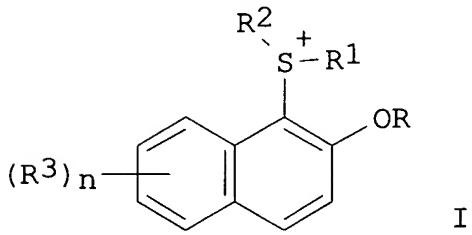
IC ICM G03F007-38
ICS G03F007-004; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST chem amplified **photoresist** layer thickness prepn **photolithog photoacid** generator
IT **Photolithography**
Photoresists
(chem. amplified **photoresist** layer with .ltoreq.350 nm thickness to have improved resoln. and line-edge roughness and its prepn.)
IT 250378-10-0P, Butyrolactone methacrylate-2-ethyl-2-adamantyl methacrylate copolymer
(binder; chem. amplified **photoresist** layer with .ltoreq.350 nm thickness to have improved resoln. and line-edge roughness and its prepn.)
IT 195154-83-7 351197-82-5 398140-45-9 398140-47-1 426262-70-6 471257-28-0 482609-97-2 524699-47-6 532989-17-6
(binder; chem. amplified **photoresist** layer with

.ltoreq.350 nm thickness to have improved resoln. and line-edge roughness and its prepn.)

IT 14159-45-6 66003-78-9 67695-82-3 144089-15-6 144317-44-2 153698-46-5 177786-96-8 240424-21-9 241806-75-7 **301664-72-2** 389859-76-1
(**photoacid** generator; chem. amplified **photoresist** layer with .ltoreq.350 nm thickness to have improved resoln. and line-edge roughness and its prepn.)

L46 ANSWER 3 OF 36 HCA COPYRIGHT 2005 ACS on STN
141:429658 **Photoacid** generators for chemically amplified **resist** compositions and patterning process. Ohsawa, Youichi; Kobayashi, Katsuhiro; Kaneko, Tatsushi (Japan). U.S. Pat. Appl. Publ. US 2004229162 A1 20041118, 29 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-842719 20040511. PRIORITY: JP 2003-132523 20030512.

GI



I

AB Disclosed are **photoacid** generators of the general formula I (R1, R2 = alkyl, R1 and R2, taken together, may form a C4-6-ring structure with sulfur; R = H, alkyl; R3 = H, alkyl, alkoxyl, nitro; n = 1-6; and Y- = alkylsulfonate, arylsulfonate, bisalkylsulfonylimide or trisalkylsulfonylmethide). Chem. amplified **resist** compns. comprising the inventive **photoacid** generators have improved resoln., thermal stability, storage stability and minimized line edge roughness.

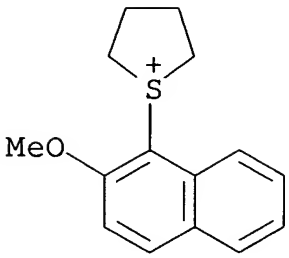
IT **795311-77-2P 795311-79-4P**
(**photoacid** generator; **photoacid** generators for chem. amplified **resist** compns. and patterning process)

RN 795311-77-2 HCA

CN Thiophenium, tetrahydro-1-(2-methoxy-1-naphthalenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 66624-29-1
CMF C15 H17 O S



CM 2

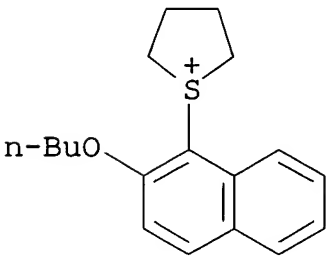
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 795311-79-4 HCA
CN Thiophenium, 1-(2-butoxy-1-naphthalenyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 795311-78-3
CMF C18 H23 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

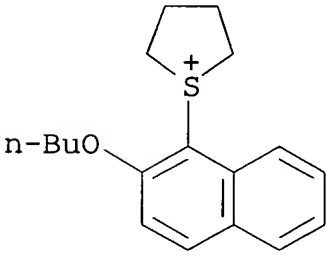
IT **795311-83-0P 795311-85-2P**
(**photoacid** generator; **photoacid** generators for chem. amplified **resist** compns. and patterning process)

RN 795311-83-0 HCA

CN Thiophenium, 1-(2-butoxy-1-naphthalenyl)tetrahydro-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

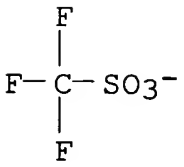
CM 1

CRN 795311-78-3
CMF C18 H23 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S

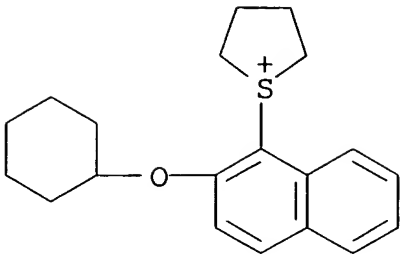


RN 795311-85-2 HCA

CN Thiophenium, 1-[2-(cyclohexyloxy)-1-naphthalenyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 795311-84-1
CMF C20 H25 O S



CM 2

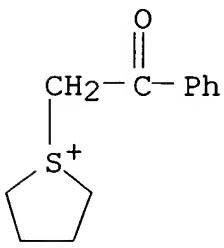
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IT **301664-71-1**
(**photoacid** generator; **photoacid** generators for chem. amplified **resist** compns. and patterning process)
RN 301664-71-1 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03C001-76
NCL 430270100; 430311000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST **photoacid** generator chem amplified **resist** compn ArF KrF **photolithog**
IT **Photolithography**
Photoresists
(**photoacid** generators for chem. amplified **resist** compns. and patterning process)
IT 3338-16-7
(basic compd.; **photoacid** generators for chem. amplified **resist** compns. and patterning process)
IT 308141-03-9 359635-45-3 433951-29-2 795312-01-5
(dissoln. inhibitor; **photoacid** generators for chem. amplified **resist** compns. and patterning process)
IT **795311-77-2P 795311-79-4P**
(**photoacid** generator; **photoacid** generators for chem. amplified **resist** compns. and patterning process)
IT 795311-80-7P 795311-82-9P **795311-83-0P**
795311-85-2P
(**photoacid** generator; **photoacid** generators for chem. amplified **resist** compns. and patterning process)
IT 39153-56-5 144317-44-2 197447-16-8 266308-64-9
301664-71-1
(**photoacid** generator; **photoacid** generators for chem. amplified **resist** compns. and patterning process)
IT 67-68-5, Dimethyl sulfoxide, reactions
(**photoacid** generator; prepn. of **photoacid** generators for chem. amplified **resist** compns.)
IT 828-51-3
(**photoacid** generators for chem. amplified **resist** compns. and patterning process)
IT 155040-27-0 158593-28-3 177034-75-2 200808-68-0 301153-46-8
326925-68-2 330596-02-6 336620-26-9 485819-00-9 485819-02-1
490040-72-7 595558-21-7 601520-54-1 601520-57-4 601520-61-0
601520-62-1 601520-65-4 635715-39-8 795311-87-4 795311-88-5
795311-89-6 795311-90-9 795311-92-1 795311-93-2 795311-95-4
795311-97-6 795311-98-7 795311-99-8
(**photoresist** resin; **photoacid** generators for

chem. amplified **resist** compns. and patterning process)

IT 93-04-9, 2-Methoxynaphthalene 109-65-9, n-Butyl bromide 135-19-3, 2-Naphthol, reactions 1600-44-8, Tetramethylene sulfoxide 10484-56-7 29420-49-3, Potassium perfluorobutanesulfonate
(prepn. of **photoacid** generators for chem. amplified **resist** compns.)

L46 ANSWER 4 OF 36 HCA COPYRIGHT 2005 ACS on STN

141:386380 Positive-working **resist** composition containing (meth)acrylic polymers and **photoacids**. Sato, Kenichiro; Yamanaka, Tsukasa; Nishiyama, Fumiyuki; Momota, Atsushi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004302199 A2 20041028, 80 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-95805 20030331.

AB Disclosed is the pos.-working **resist** compn. comprising (A) a resin which has acrylic repeating units and an alicyclic group and increases its soly. to a developer upon the interaction with an acid, (B) a resin free of an arom. group which has an acrylic repeating unit and a methacrylic repeating unit and increases its soly. to the developer upon the interaction with an acid, and (C) a **photoacid**. The compn. exhibited small PEB time dependence when it is used as a far-UV **photoresist**.

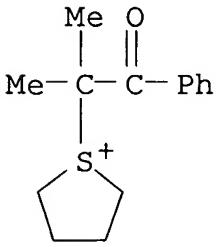
IT **470482-89-4**
(**photoacid**; pos.-working **resist** compn. contg. (meth)acrylic polymers and **photoacid**)

RN 470482-89-4 HCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3
CMF C14 H19 O S



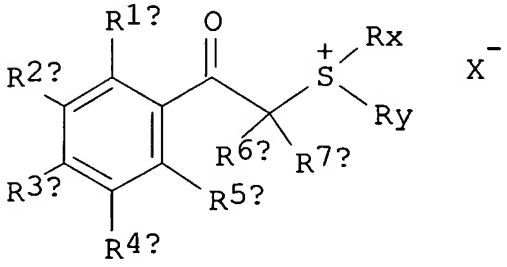
CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-039
ICS H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST pos working **resist photoresist** compn methacrylic acrylic polymer **photoacid**
IT **Photolithography**
Photoresists
Resists
(pos.-working **resist** compn. contg. (meth)acrylic polymers and **photoacid**)
IT 144089-15-6 258872-05-8 284474-28-8 425670-64-0 **470482-89-4**
(**photoacid**; pos.-working **resist** compn. contg. (meth)acrylic polymers and **photoacid**)
IT 485391-35-3P 782499-64-3P, 2-Adamantyl-2-propyl acrylate-3,5-dihydroxy-1-adamantyl acrylate-norbornenelactone acrylate copolymer 782499-66-5P
(pos.-working **resist** compn. contg. (meth)acrylic polymers and **photoacid**)

L46 ANSWER 5 OF 36 HCA COPYRIGHT 2005 ACS on STN
141:386378 Positive-working **resist** composition containing alkali soluble resins and **photoacids**. Sasaki, Tomoya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004302189 A2 20041028, 93 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-95605 20030331.
GI



I

AB Disclosed is the pos.-working **resist** compn. comprising (a) a resin increasing its soly. to an alkali developer upon an interaction with an acid and (b) a **photoacid**, wherein the resin (a) contains .gtoreq.1 repeating unit having .gtoreq.1 group represented by -C(OR)(CR50R51R52)(CR52R54R55) (T50-55 = H, F, alkyl; and R = H, acid decomposable or nondecomposable group) and the **photoacid** (b) is represented by R1bR2bR33bS+ X- (R1b-3b = org. group free of arom. ring; X- = sulfonic acid, carboxylic acidsulfonylimide) or I (R1c-5c = H, alkyl, alkoxy, etc.; R6c-7c = H, alkyl, aryl; Rx, Ry = alkyl, 2-oxoalkyl, etc.). The compn. was suitable for a light source having a wavelength .ltoreq.160 nm.

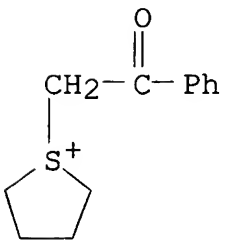
IT **301664-71-1**
(**photoacid**; pos.-working **resist** compn. contg. alkali sol. resin and **photoacid**)

RN 301664-71-1 HCA

CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-039
ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38

ST pos working **resist** compn

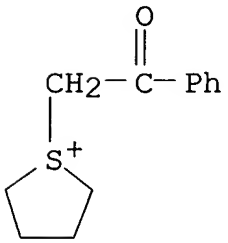
IT **Photolithography**
Photoresists
Resists
(pos.-working **resist** compn. contg. alkali sol. resin and **photoacid**)
IT 160481-39-0 **301664-71-1** 347193-29-7 454471-17-1 540729-47-3
(**photoacid**; pos.-working **resist** compn. contg. alkali sol. resin and **photoacid**)
IT 782482-74-0P 782482-76-2P 782482-78-4P 782482-79-5P 782482-82-0P 782482-84-2P 782482-85-3P 782482-88-6P 782482-91-1P
(pos.-working **resist** compn. contg. alkali sol. resin and **photoacid**)
IT 98-59-9, p-Toluenesulfonic acid chloride 107-30-2, Chloromethyl-methyl ether 802-93-7, 1,3-Bis(2-hydroxyhexafluoroisopropyl)benzene 3536-96-7, Vinyl magnesium chloride
(pos.-working **resist** compn. contg. alkali sol. resin and **photoacid**)
IT 501935-24-6P 568587-26-8P 585573-34-8P 585573-35-9P 585573-59-7P
(pos.-working **resist** compn. contg. alkali sol. resin and **photoacid**)

L46 ANSWER 6 OF 36 HCA COPYRIGHT 2005 ACS on STN
141:358073 Positive **resist** composition and pattern formation method. Momota, Makoto; Nakao, Hajime (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004202954 A1 20041014, 58 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-802808 20040318. PRIORITY: JP 2003-88357 20030327; JP 2003-89020 20030327.
AB A pos. **resist** compn. comprises (A) a resin capable of increasing its soly. in an alkali developer under action of an acid, wherein the resin contains a repeating unit originated in an acrylic acid ester deriv. in amt. of 50-100 mol% based on all repeating units and has a repeating unit having a specific lactone structure and a repeating unit having a monohydroxyadamantane or dihydroxyadamantane structure, (B) a compd. of **generating** an **acid** upon irradn. with actinic rays or radiation, and (C) an org. solvent. The object of the present invention is to provide a pos. **resist** compn. reduced in the generation of cracking at the thermal flow process and excellent in the dry etching resistance, and a pattern formation method using the compn.
IT **301664-71-1**
(pos. **resist** compn. and pattern formation method)
RN 301664-71-1 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA

INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

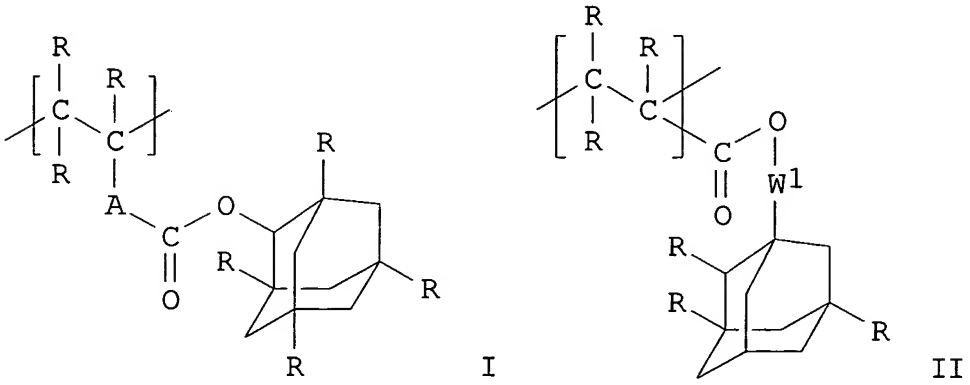
$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03C001-52
NCL 430170000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST pos **resist** compn pattern polymer **photolithog**
IT Polysiloxanes, uses
(KP-341, Troysol S-366; pos. **resist** compn. and pattern formation method)
IT **Photolithography**
Positive **photoresists**
(pos. **resist** compn. and pattern formation method)
IT 376348-94-6P 460754-19-2P 485391-35-3P 561308-62-1P
610300-94-2P 610300-95-3P 774242-23-8P 774242-24-9P
774242-25-0P 774242-26-1P 774242-27-2P 774242-28-3P
774242-29-4P 774242-30-7P 774242-31-8P 774242-32-9P
774242-33-0P 774242-34-1P 774242-35-2P 774242-36-3P
774242-37-4P
(pos. **resist** compn. and pattern formation method)
IT 97-64-3, Ethyl lactate 108-32-7, Propylene carbonate 108-94-1, Cyclohexanone, uses 120-92-3, Cyclopentanone 583-60-8, 2-Methylcyclohexanone 613-29-6, N,N-Di-butylaniline 1116-76-3, Trioctylamine 1320-67-8, Propylene glycol monomethyl ether

3001-72-7, 1,5-Diazabicyclo[4.3.0]-non-5-ene 31075-38-4, Adamantylamine 84540-57-8, Propylene glycol monomethyl ether acetate 91552-65-7, 2,5-Diisopropylaniline 137462-24-9, Megafac F 176 144317-44-2 216679-67-3, Megafac R 08 284474-28-8 **301664-71-1** 680200-02-6
(pos. **resist** compn. and pattern formation method)

L46 ANSWER 7 OF 36 HCA COPYRIGHT 2005 ACS on STN
141:340392 Positive **resist** composition and method of pattern formation. Yamanaka, Tsukasa; Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004197707 A1 20041007, 52 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-801723 20040317. PRIORITY: JP 2003-95804 20030331.

GI



I II

AB A pos. **resist** compn. comprises: at least two resins which differ in glass transition temp. by at least 5.degree. C and have structural formulas I and II (R = H, OH, halogen, C1-4-alkyl, provided that R's are the same or different; A = single bond, alkylene, ether, thioether, carbonyl, ester, amide, sulfonamide, urethane, urea; W1 = alkylene group.); and a compd. which **generates** an **acid** upon irradn. with actinic rays or radiation, wherein each of the two resins comprises at least either of a repeating unit derived from an acrylic acid deriv. monomer and a repeating unit derived from an methacrylic acid deriv. monomer and further comprises an alicyclic structure and at least one group that increases a soly. of the resin in alk. developer by the action of an acid. The object of the invention is to provide a **resist** compn. which is suitable for exposure to light having a wavelength of 200 nm or shorter, in particular, exposure with an ArF excimer laser, shows sufficient resoln. even in ordinary pattern formation, and has such thermal flow suitability that a reduced

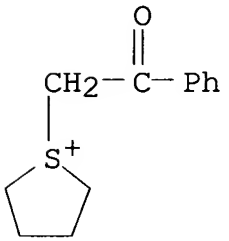
pattern size can be obtained only through flow bake at an appropriate temp., and it is easy to regulate the flow amt. while attaining an appropriate flow rate.

IT **398141-19-0 398141-23-6 470482-89-4 610301-34-3 680200-03-7**
(pos. **resist** compn. and method of pattern formation)

RN 398141-19-0 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

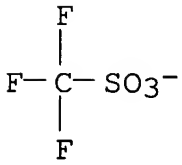
CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

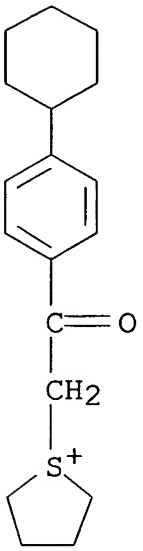
CRN 37181-39-8
CMF C F3 O3 S



RN 398141-23-6 HCA
CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 398141-22-5
CMF C18 H25 O S



CM 2

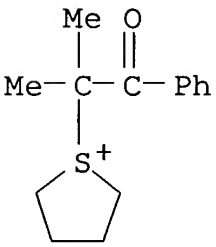
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 470482-89-4 HCA
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3
CMF C14 H19 O S



CM 2

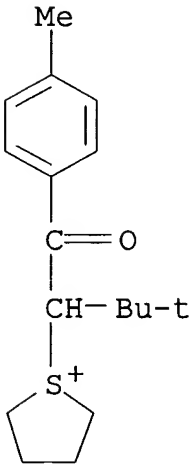
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-34-3 HCA
CN Thiophenium, 1-[2,2-dimethyl-1-(4-methylbenzoyl)propyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-33-2
CMF C17 H25 O S



CM 2

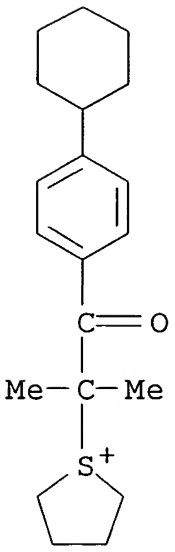
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 680200-03-7 HCA
CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6
CMF C20 H29 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03C001-76
NCL 430281100; 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST pos **resist** compn ArF **photolithog** polymer
IT **Photolithography**
Positive **photoresists**
(pos. **resist** compn. and method of pattern formation)
IT 391232-40-9
(**photoacid** generator; pos. **resist** compn. and method of pattern formation)
IT 366458-35-7P 405509-21-9P 581784-06-7P 610300-93-1P
610300-94-2P 677351-19-8P 680223-02-3P 724776-70-9P
766528-07-8P 766528-25-0P 766528-39-6P 771566-28-0P
771566-31-5P 771566-37-1P 771566-45-1P 771566-49-5P

771566-52-0P 771577-83-4P
(pos. **resist** compn. and method of pattern formation)
IT 144317-44-2 227199-92-0 240424-21-9 258872-05-8 284474-28-8
312386-77-9 347193-29-7 389859-76-1 **398141-19-0**
398141-23-6 470482-89-4 506445-19-8
610301-34-3 680200-03-7 771566-61-1
(pos. **resist** compn. and method of pattern formation)

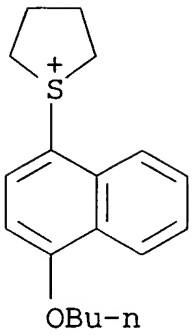
L46 ANSWER 8 OF 36 HCA COPYRIGHT 2005 ACS on STN
141:164831 Radiation-sensitive resin composition. Yamamoto, Masafumi; Ishida, Hidemitsu; Ishii, Hiroyuki; Kajita, Toru (Japan). U.S. Pat. Appl. Publ. US 2004146802 A1 20040729, 57 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-345157 20030116.
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A radiation-sensitive resin compn. comprises (A) a resin which comprises at least one recurring unit I, II, III (R1,3,5 = H, methyl; R2,4,6 = H, C1-4 alkyl; X = methylene group, O, S; a =1-5), and a recurring unit IV (R7 =H, methyl; R8 = C4-20 monovalent alicycli hydrocarbon group, C1-4 alkyl) and is insol. or scarcely sol. in alkali, but becomes alkali sol. by action of an acid, (B) a **photoacid** generator, and (C) a polycyclic compd. The resin compn. is used as a chem.-amplified **resist** for microfabrication utilizing deep UV rays.
IT **209482-18-8 380886-84-0**
(**photoacid** generator; radiation-sensitive resin compn. for **photoresist** contg.)
RN 209482-18-8 HCA
CN Thiophenium, 1-(4-butoxy-1-naphthalenyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 209482-14-4
CMF C18 H23 O S



CM 2

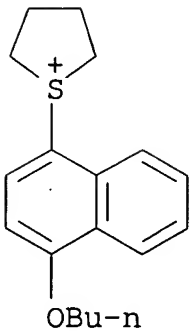
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 380886-84-0 HCA
CN Thiophenium, 1-(4-butoxy-1-naphthalenyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 209482-14-4
CMF C18 H23 O S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S

$^{-}O_3S-(CF_2)_7-CF_3$

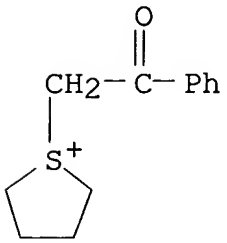
IC ICM G03F007-004
NCL 430270100; 430905000; 430910000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST **photoresist photolithog** radiation sensitive resin compn
IT **Photolithography**
(Deep UV; radiation-sensitive resin compn. for)
IT **Photoresists**
(radiation-sensitive resin compn. for)
IT 194999-85-4 **209482-18-8 380886-84-0** 406198-76-3
(**photoacid** generator; radiation-sensitive resin compn. for **photoresist** contg.)
IT 157692-53-0, tert-Butyl deoxycholate 213901-06-5 231296-44-9, t-Butoxycarbonylmethyl deoxycholate
(polycyclic compd; radiation-sensitive resin compn. for **photoresist** contg.)
IT 195000-69-2P 340964-38-7P 340964-44-5P 473699-88-6P
(radiation-sensitive resin compn. for **photoresist** contg.)

L46 ANSWER 9 OF 36 HCA COPYRIGHT 2005 ACS on STN
140:397369 Positive type **resist** composition. Nakao, Hajime (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004087694 A1 20040506, 45 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-694171 20031028. PRIORITY: JP 2002-321263 20021105.
AB A pos. type **resist** compn. comprises: (A) a resin having a monocyclic or polycyclic alicyclic hydrocarbon structure, which increases the soly. in an alkali developing soln. by the action of an acid; (B) a compd. capable of **generating** an **acid** upon irradn. with an actinic ray or a radiation; and (C) an alkoxy alc. as a solvent, wherein an alkoxy group and an alc. hydroxyl group are connected to each other via at least three carbons. The object of the invention is to provide a pos. type **resist** compn. capable of suppressing change in sensitivity with of time and having excellent affinity for developer during development.
IT **301664-71-1 398141-23-6**
(**photoacid** generator; pos. type **resist** compn.)

RN 301664-71-1 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

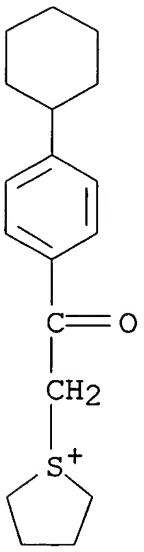
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 398141-23-6 HCA
CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 398141-22-5
CMF C18 H25 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM C08K005-06
NCL 524376000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST pos type **resist** compn **photoresist** **photolithog**
IT Polysiloxanes, uses
(KP-341, Troy Sol S-366; pos. type **resist** compn.)
IT **Photolithography**
Positive **photoresists**
(pos. type **resist** compn.)
IT 102-82-9, Tributylamine 1116-76-3, Trioctylamine 3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-nonene 6674-22-2, 1,8-Diazabicyclo[5.4.0]-7-undecene 36631-19-3, Triphenylimidazole 57951-36-7, Dimethylaminopyridine 153921-59-6, Diisopropylaniline
(basic compd.; pos. type **resist** compn.)
IT 284474-28-8 **301664-71-1** 391232-40-9 398141-18-9 **398141-23-6**
(**photoacid** generator; pos. type **resist** compn.)

IT 250378-10-0P 364736-22-1P 398140-38-0P 398140-45-9P
398140-47-1P 428516-13-6P 482609-97-2P 524699-47-6P
532989-17-6P
(resin; pos. type **resist** compn.)
IT 547-64-8, Methyl lactate 1320-67-8, Propylene glycol monomethyl ether 2517-43-3, 3-Methoxy-1-butanol 56539-66-3, 3-Methoxy-3-methylbutanol 82655-81-0, 3-Ethoxy-1-butanol 84540-57-8, Propylene glycol monomethyl ether acetate 90971-84-9, 4-Methoxy-2-pentanol 98516-33-7, Propylene glycol monomethyl ether propionate
(solvent; pos. type **resist** compn.)
IT 137462-24-9, Megafac F176 216679-67-3, Megafac R08
(surfactant; pos. type **resist** compn.)

L46 ANSWER 10 OF 36 HCA COPYRIGHT 2005 ACS on STN
140:347339 A HFIPS-based polymer approach for 157-nm single layer **photoresist**. Kanna, Shinichi; Mizutani, Kazuyoshi; Yasunami, Shoichiro; Kawabe, Yasumasa; Tan, Shiro; Yagihara, Morio; Kokubo, Tadayoshi; Malik, Sanjay; Dilocker, Stephanie J. (Fuji Photo Film Co., Ltd., Shizuoka, 421-0302, Japan). Proceedings of SPIE-The International Society for Optical Engineering, 5039(Pt. 1, Advances in Resist Technology and Processing XX), 612-621 (English) 2003. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.
AB **Resist** materials for 157 nm lithog. is believed to be one of the key technol. for producing patterns below 70 nm. Many different types of fluorine-contg. polymer platforms have been energetically pursued by a no. of researchers, and some of them appear to be promising in giving a high transparency that has been the essential challenge in realizing this technol. While such highly transparent polymers are the premise in achieving a good imaging, how to get sufficient etch resistance of the polymers can be of another challenge. Actually it is often reported that the etch resistance and the transparency are in trade-off relationship in many cases as a function of fluorine atom content in the polymers. Therefore how to design an etch-resistant polymer while maintaining the good transparency is still a big challenge in developing a practically usable 157 nm polymer platform. One of the polymer platforms that the authors believe useful for 157 nm is the polymers having hexafluoroisopropanolstyrene (HFIPS) monomer unite in their backbones. The HFIPS unit is attractive because the styrene group provides good etch resistance and hexafluoroisopropanol group (HFIP) provides an acidic mol. while implementing a transparency into the mol. The lithog. potential of the HFIPS-based polymer system was demonstrated with the fact that a prototype **resist** from this system was able to print a 75 nm line and space 1:1 pairs with an attenuated PSM under 0.60 NA stepper exposure. A relatively thin **resist** thickness, 100

nm, was applied due to the limited transparency of the polymer. The patterned exhibited very smooth line edge and a clear pattern definition although a slight T-topping was obsd. The results imply that we should be able to achieve a similar lithog. performance with a thicker film (150 .apprx. 200 nm), if we can further increase the transparency of the HFIPS-based polymer. The authors are pursuing the approach further aiming at this direction and are getting several new polymers that are more transparent. The paper will present some of the results from later work with such an attempt. The paper will also discuss etch resistance of the HFIPS-based polymer. The etch rates measured for the HFIPS-based polymers were only around 10% faster than std. 248 nm **resist**, which we believe fairly good among various fluorine-contg. polymers so far proposed. This was convincing that this polymer system could provide a competitive platform in the practical use. It is generally thought that the etch rate of **resist** films are mainly affected by their polymer compns. or structures but there are few reported on the influence of the other components in **resist** formulation. The authors found that the concn. of PAG and quencher influenced both etch rate and **resist** surface roughness after the etch in this materials system, which implied there are some more room for further etch resistance improvement.

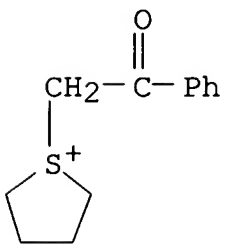
IT **301664-71-1**
(**photoacid** generator; **photoacid** generator effect on lithog. properties of hexafluoroisopropanolstyrene-based polymer system for 157-nm single layer **photoresist**)

RN 301664-71-1 HCA

CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST hexafluoroisopropanol group contg polymer vacuum UV **photolithog photoresist**;
hexafluoroisopropanolstyrene based polymer chem amplified vacuum UV **photolithog photoresist**
IT Optical absorption
Surface roughness
(phys. and lithog. properties of hexafluoroisopropanolstyrene-based polymer system for 157-nm single layer **photoresist**)
IT Etching
(plasma; phys. and lithog. properties of hexafluoroisopropanolstyrene-based polymer system for 157-nm single layer **photoresist**)
IT **Photoresists**
(vacuum-UV, chem. amplified; phys. and lithog. properties of hexafluoroisopropanolstyrene-based polymer system for 157-nm single layer **photoresist**)
IT 75-59-2, Tetramethylammonium hydroxide
(developer; phys. and lithog. properties of hexafluoroisopropanolstyrene-based polymer system for 157-nm single layer **photoresist**)
IT 430437-18-6 607710-65-6 607710-73-6
(lithog. properties of hexafluoroisopropanolstyrene-based polymer system for 157-nm single layer **photoresist**)
IT 13891-29-7, Triphenylsulfonium tosylate 144317-44-2, Triphenylsulfonium perfluorobutanesulfonate 160509-80-8 194999-85-4, Bis(4-tert-butylphenyl)iodonium perfluorobutanesulfonate **301664-71-1** 347193-29-7
(**photoacid** generator; **photoacid** generator effect on lithog. properties of hexafluoroisopropanolstyrene-based polymer system for 157-nm single layer **photoresist**)
IT 66003-78-9, Triphenylsulfonium triflate
(**photoacid** generator; phys. and lithog. properties of hexafluoroisopropanolstyrene-based polymer system for 157-nm single layer **photoresist**)
IT 2386-82-5D, p-(Hexafluoro-2-hydroxypropyl)styrene, polymers 116352-29-5, 4-(2-Hydroxyhexafluoroisopropyl)styrene homopolymer

(phys. and lithog. properties of hexafluoroisopropanolstyrene-based polymer system for 157-nm single layer **photoresist**)

IT 75-73-0, Carbon tetrafluoride 7782-44-7, Oxygen, uses
(plasma etch; phys. and lithog. properties of hexafluoroisopropanolstyrene-based polymer system for 157-nm single layer **photoresist**)

L46 ANSWER 11 OF 36 HCA COPYRIGHT 2005 ACS on STN
140:329525 Photosensitive composition and **acid generator**. Kodama, Kunihiko (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1406122 A2 20040407, 83 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2003-21631 20030925. PRIORITY: JP 2002-279273 20020925.

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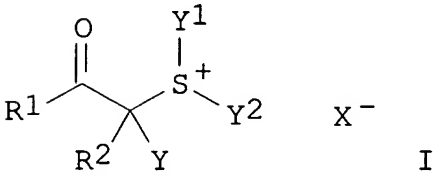


I

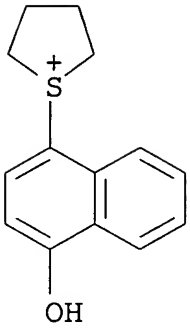
AB A photosensitive compn. comprises an **acid generator** of the formula I (R1 = alkyl; R2 = H, alkyl, aryl; Y = alkyl; Y1, Y2 = alkyl, aryl, aralkyl, hetero atom-contg. arom.; R1 and R2 may be bonded to each other to form a ring; R2 and Y may be bonded to each other to form a ring; Y1 and Y2 may be bonded to each other to form a ring; two or more structures of the general formula I may be bonded to each other at any position of R1, R2 or Y, or Y1 or Y2 via a connecting group; X = non-nucleophilic anion)., an alk. developer-sol. resin, an acid crosslinking agent, a basic compd., and a surfactant. The object of the present invention is to provide an **acid generator** that has a high transparency against rays of not longer than 220 nm, has an enhanced photodegrdn. ability as compared with conventionally known **acid generators**, thereby revealing high sensitivity, and providing a good **resist** profile. The photosensitive compn. of the present invention has excellent sensitivity and pattern profile.

IT **220475-58-1 301664-71-1 301664-72-2 470482-89-4 677351-66-5**
(**acid generator**; photosensitive compn. and **acid generator**)

RN 220475-58-1 HCA
CN Thiophenium, tetrahydro-1-(4-hydroxy-1-naphthalenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 51843-75-5
CMF C14 H15 O S



CM 2

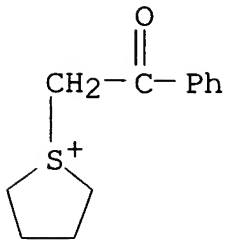
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 301664-71-1 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

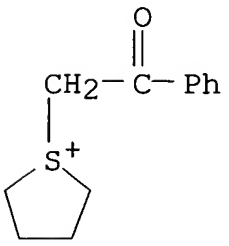
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 301664-72-2 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 45298-90-6
CMF C8 F17 O3 S

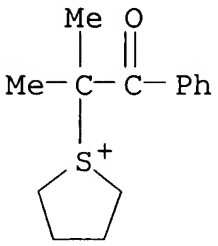
$^{-}O_3S-(CF_2)_7-CF_3$

RN 470482-89-4 HCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3
CMF C14 H19 O S



CM 2

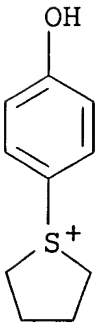
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 677351-66-5 HCA
CN Thiophenium, tetrahydro-1-(4-hydroxyphenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 51843-72-2
CMF C10 H13 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-004
ICS G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST photosensitive compn **acid generator** **photoresist photolithog**
IT Polysiloxanes, uses
(KP-341, Troysol S-366; photosensitive compn. and **acid generator**)
IT **Photolithography**
Photoresists
(photosensitive compn. and **acid generator**)
IT 677351-28-9P
(**acid generator**; photosensitive compn. and **acid generator**)
IT 66003-78-9 133710-62-0 135133-12-9 138529-81-4 144317-44-2
177034-80-9 **220475-58-1** 227199-92-0 241806-75-7
258341-98-9 258872-05-8 261917-44-6 284474-28-8 301153-77-5
301664-71-1 **301664-72-2** 347193-28-6
365971-84-2 389859-76-1 391232-40-9 398141-18-9
470482-89-4 474510-73-1 610301-07-0 677351-29-0
677351-30-3 677351-31-4 677351-32-5 677351-34-7 677351-36-9
677351-37-0 677351-39-2 677351-41-6 677351-43-8 677351-45-0
677351-47-2 677351-48-3 677351-50-7 677351-52-9 677351-54-1
677351-56-3 677351-57-4 677351-58-5 677351-60-9 677351-62-1
677351-64-3 677351-65-4 **677351-66-5**
(**acid generator**; photosensitive compn. and **acid generator**)
IT 141-07-1 3089-11-0 4356-60-9 161679-94-3 162846-57-3
162846-59-5 185502-14-1
(crosslinking agent; photosensitive compn. and **acid generator**)
IT 143336-94-1P 250378-10-0P 289623-64-9P 312620-54-5P
359635-35-1P 370102-83-3P 370866-39-0P 391232-36-3P
391613-77-7P 398140-38-0P 398140-43-7P 398140-45-9P
398140-57-3P 398140-59-5P 398140-68-6P 398140-69-7P
398140-77-7P 398140-80-2P 405509-19-5P 406702-00-9P
430437-18-6P 459418-30-5P 460754-13-6P 482609-97-2P

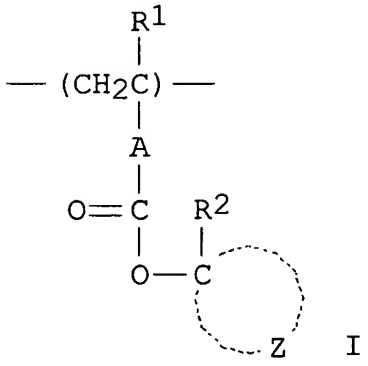
508210-04-6P 515876-73-0P 521303-15-1P 521303-16-2P
607710-65-6P 607710-66-7P 607710-67-8P 607710-68-9P
607710-69-0P 607710-70-3P 607710-71-4P 607710-72-5P
607710-73-6P 607710-77-0P 610300-97-5P 610300-98-6P
610301-00-3P 610301-01-4P 610301-03-6P 610301-04-7P
610301-05-8P 615278-35-8P 654076-36-5P 676515-93-8P
677351-18-7P 677351-19-8P 677351-20-1P 677351-22-3P
677351-24-5P
(photosensitive compn. and **acid generator**)

IT 24979-69-9 24979-70-2 129674-22-2 137462-24-9, Megafac F176
158593-28-3 177034-75-2 185405-14-5 200808-68-0 216679-67-3,
Megafac R08 321164-59-4 325143-38-2 345212-27-3 372968-15-5
610301-50-3 677351-26-7
(photosensitive compn. and **acid generator**)

IT 29420-49-3, Potassium nonafluorobutanesulfonate 55339-64-5
(prepn. of **photoacid** generator)

L46 ANSWER 12 OF 36 HCA COPYRIGHT 2005 ACS on STN
140:311995 Positive **resist** composition and pattern formation method. Nishiyama, Fumiyuki; Sato, Kenichiro; Kodama, Kunihiko (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004063827 A1 20040401, 56 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-669603 20030925. PRIORITY: JP 2002-287252 20020930; JP 2002-287393 20020930.

GI



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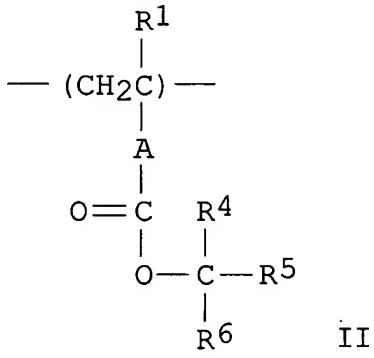
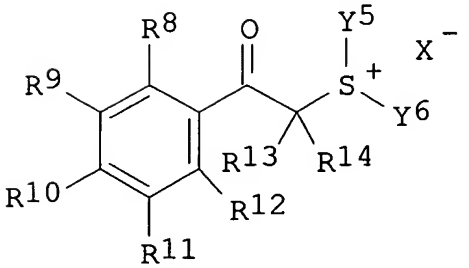
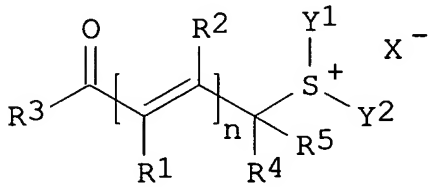


II



III



IV

AB A pos. **resist** compn. comprising: (A) a resin having alicyclic hydrocarbon groups in side chains, contg. repeating units of general formulas I and II (R1 = H, alkyl; A = linkage group, R2 = C1-4-alkyl; Z = group forming an alicyclic hydrocarbon group together with the carbon atom; R4-R6 = hydrocarbon group, alicyclic hydrocarbon) which increases the soly. in an alkali developing soln. by the action of an acid; and (B) a particular sulfonium compd. having a general structures of formulas III and IV (R1-R3 = H, alkyl, alkenyl, aryl, alkoxy; R4, R5 = H, cyano, alkyl, aryl, alkoxy; Y1, Y2 = alkyl, aryl, aralkyl, heteroatom-contg. arom. group; n = 1-4; R8-R12 = H, nitro, halogen, alkyl, alkoxy, alkyloxycarbonyl, aryl, acylamino, with the proviso that at least two of R8-R12 may be bonded with each other to form a ring; R13 = H, cyano, alkyl, aryl; R14 = alkyl, aryl; Y5, Y6 = alkyl, aryl, aralkyl, heteroatom-contg. arom. group, Y5 and Y6 may be bonded with each other to form a ring; X- = non-nucleophilic anion) which is capable of **generating** an **acid** upon irradn. with an actinic ray or radiation. The object of the present invention is to provide a pos. **resist** compn. that is used suitably in micro-photofabrication utilizing far UV light, notably ArF excimer laser beam, and offers excellent line edge roughness performance and excellent pattern collapse performance.

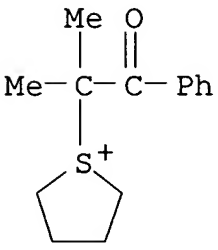
IT **470482-89-4 610301-08-1 610301-13-8 610301-21-8 610301-34-3 676502-26-4**
(**photoacid** generator; pos. **resist** compn. and pattern formation method)

RN 470482-89-4 HCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3
CMF C14 H19 O S



CM 2

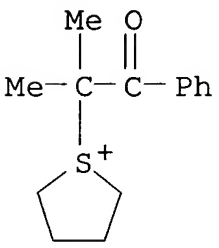
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-08-1 HCA
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3
CMF C14 H19 O S



CM 2

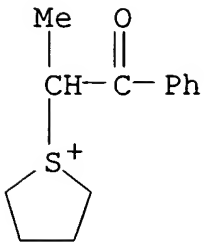
CRN 45298-90-6
CMF C8 F17 O3 S

$^{-}O_3S-(CF_2)_7-CF_3$

RN 610301-13-8 HCA
CN Thiophenium, tetrahydro-1-(1-methyl-2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 85629-06-7
CMF C13 H17 O S



CM 2

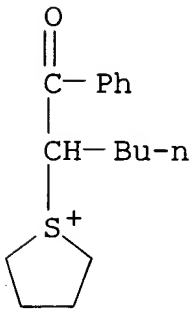
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-21-8 HCA
CN Thiophenium, 1-(1-benzoylpentyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-20-7
CMF C16 H23 O S



CM 2

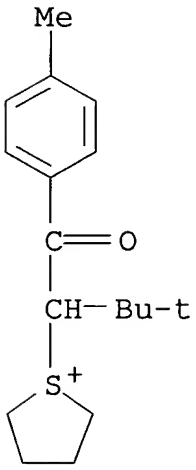
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-34-3 HCA
CN Thiophenium, 1-[2,2-dimethyl-1-(4-methylbenzoyl)propyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-33-2
CMF C17 H25 O S



CM 2

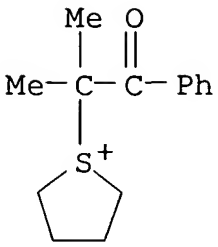
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 676502-26-4 HCA
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

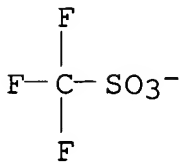
CM 1

CRN 470482-88-3
CMF C14 H19 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



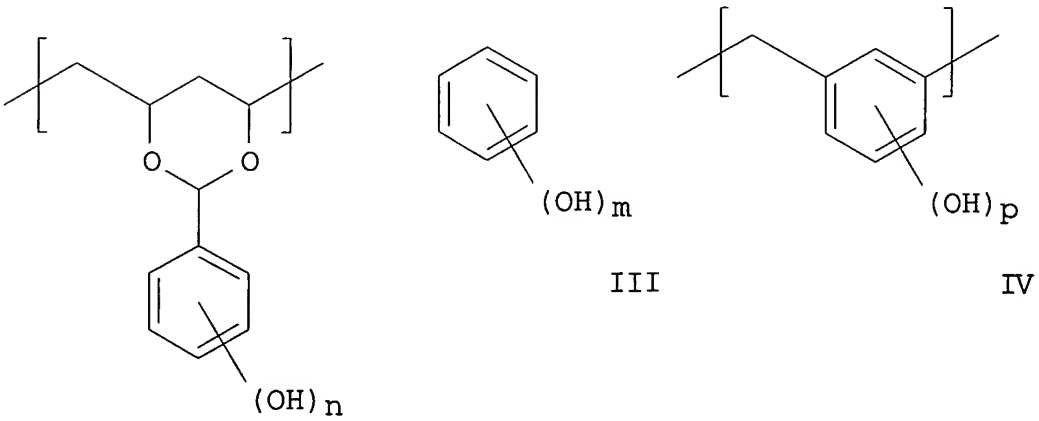
IC ICM C08K005-41
NCL 524155000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST pos **resist** compn **photolithog** UV pattern formation method
IT Polysiloxanes, uses
(KP-341, Troysol S-366; pos. **resist** compn. and pattern formation method)
IT **Photolithography**
(UV; pos. **resist** compn. and pattern formation method)
IT Positive **photoresists**
(pos. **resist** compn. and pattern formation method)
IT **470482-89-4** 524959-11-3 524959-16-8 524959-18-0
524959-28-2 610301-07-0 **610301-08-1** 610301-09-2
610301-13-8 610301-16-1 **610301-21-8**
610301-28-5 **610301-34-3** 676502-09-3 676502-10-6
676502-11-7 676502-13-9 676502-14-0 676502-16-2 676502-18-4
676502-20-8 676502-22-0 676502-24-2 676502-25-3
676502-26-4 676502-27-5 676502-29-7
(**photoacid** generator; pos. **resist** compn. and pattern formation method)
IT 479081-07-7P 479081-08-8P 479081-10-2P 479081-11-3P
479081-12-4P 479081-13-5P 479081-14-6P 479081-15-7P

479081-18-0P 479081-19-1P 479081-21-5P 479081-22-6P
479081-24-8P 676502-04-8P 676502-05-9P 676502-07-1P
676502-08-2P 676522-31-9P
(pos. **resist** compn. and pattern formation method)

IT 60-80-0, Antipyrine 102-82-9, Tri-n-butylamine 3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-nonene 9016-45-9, Polyoxyethylene nonyl phenyl ether 24544-04-5, 2,6-Diisopropylaniline 36631-19-3, Triphenylimidazole 41556-26-7, Bis(1,2,2,6,6,-penta methyl-4-piperidyl)sebacate 137462-24-9, Megafac F176 216679-67-3, Megafac R08
(pos. **resist** compn. and pattern formation method)

L46 ANSWER 13 OF 36 HCA COPYRIGHT 2005 ACS on STN
140:189976 Crosslinked resin composition and semiconductor device fabrication. Hashimoto, Kazuhiko; Suetsugu, Masumi (Sumitomo Chemical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004053723 A2 20040219, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-208060 20020717.

GI



II III IV

AB The compn. contains a water-sol. resin having CH2CH(OH)(I) and II (n = 1-3) as repeating units and a crosslinking agent, and crosslinks in the presence of an acid. The compn. contains a water-sol. resin having I as a repeating unit, III (m = 1-3) and a crosslinking agent, and crosslinks in the presence of an acid. The compn. contains a water-sol. resin having I as a repeating unit, an oligomer having repeating unit IV (p = 2-3) and a crosslinking agent, and crosslinks in the presence of an acid. Semiconductor

device is manufd. by the steps of (1) forming a pattern using a **resist** contg. a **photoacid** generator on a substrate, (2) coating the above resin compn. on the **resist** pattern, and (3) curing the resin by the action of the acid from the **resist** pattern. Super fine pattern exceeding wavelength limit is obtained using .ltoreq.200 nm light and the pattern shows good dry etching resistance.

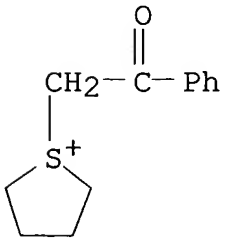
IT **301664-71-1**
(**resist** contg.; resin compn. cured by **photoacid** from **resist** pattern for semiconductor device fabrication)

RN 301664-71-1 HCA

CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-038
ICS C08F008-00; H01L021-027

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76

ST crosslinkable resin compn semiconductor device fabrication; **resist photoacid** generator patternwise resin curing

IT Polyvinyl acetals

(hydroxybenzals; resin compn. cured by **photoacid** from **resist** pattern for semiconductor device fabrication)

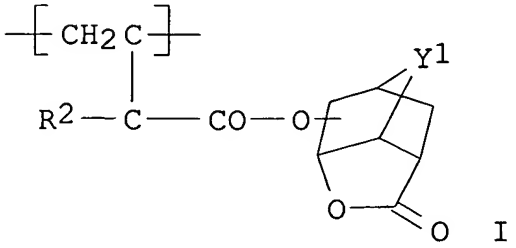
IT Photoimaging materials
Photolithography
Semiconductor device fabrication
(resin compn. cured by **photoacid** from **resist** pattern for semiconductor device fabrication)

IT 87-66-1DP, Pyrogallol, copolymers with vinyl acetal polymers 95-01-2DP, 2,4-Dihydroxybenzaldehyde, cyclic acetals with poly(vinyl alc.) 108-46-3DP, Resorcinol, copolymers with vinyl acetal polymers 108-73-6DP, Phloroglucinol, copolymers with vinyl acetal polymers 487-70-7P, 2,4,6-Trihydroxybenzaldehyde 17464-88-9DP, Tetramethoxymethyl glycoluril, copolymers with vinyl acetal polymers
(resin compn. cured by **photoacid** from **resist** pattern for semiconductor device fabrication)

IT 177034-80-9, (4-Methylphenyl)diphenylsulfonium perfluorooctanesulfonate **301664-71-1**
(**resist** contg.; resin compn. cured by **photoacid** from **resist** pattern for semiconductor device fabrication)

L46 ANSWER 14 OF 36 HCA COPYRIGHT 2005 ACS on STN
140:10623 Chemically amplified **photoresist** compositions with excellent transmission of short-wavelength radiation and reduced development defects. Nishimura, Yukio; Nishimura, Isao; Kobayashi, Eiichi; Shimokawa, Tsutomu (JSR Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003337417 A2 20031128, 42 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-146290 20020521.

GI



I

AB The compns. contain alkali-sol. polymers (A; which become alkali-sol. on reaction with acids) having repeating units C(CnF2n+1)(C:OOCR13)CH2 (R1 = C1-4 linear or branched alkyl or its deriv., C4-20 alicyclic hydrocarbyl or its deriv.; 2 of R1 may form alicyclic ring; n = 1-8) and CR2(C:OOR)CH2 [R = I, 7-oxo-6-oxabicyclo[3.2.1]octanyl, R3-(un)substituted 2-oxotetrahydropyranyl, Y2R'; R' = R3-(un)substituted

2-oxotetrahydrofuranyl; R2 = H, me; Y1 = methylene, methylmethylene, dimethylmethylene, O, S; R3 = C1-5 linear or branched alkyl or alkoxyl; Y2 = single bond, methylene] and radiation-sensitive **photoacid** generators (B).

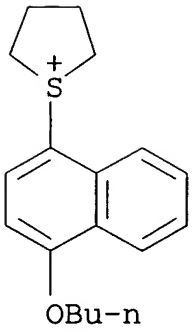
IT **209482-18-8**
(**photoacid** generator; chem. amplified **photoresists** contg. adamantyl fluoroalkylacrylate copolymers with good transmission of short-wavelength radiation and reduced development defects)

RN 209482-18-8 HCA

CN Thiophenium, 1-(4-butoxy-1-naphthalenyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 209482-14-4
CMF C18 H23 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-039
ICS C08F220-24; C08F220-28; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST radiation sensitive polymer far UV transmission; **photoresist** chem amplification adamantyl fluoroacrylate copolymer; wafer defect redn **photoresist** excimer laser

IT **Photoresists**

(chem. amplified **photoresists** contg. adamantyl fluoroalkylacrylate copolymers with good transmission of short-wavelength radiation and reduced development defects)

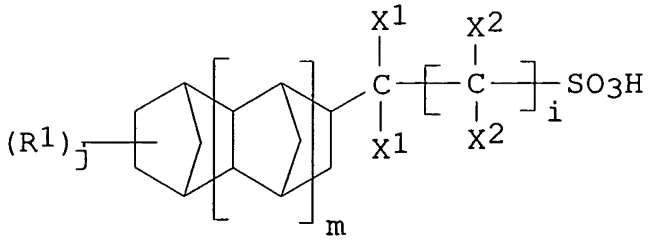
IT **Photolithography**
(far UV; chem. amplified **photoresists** contg. adamantyl fluoroalkylacrylate copolymers with good transmission of short-wavelength radiation and reduced development defects)

IT 627528-88-5P 627528-89-6P 627528-90-9P 627528-91-0P
(chem. amplified **photoresists** contg. adamantyl fluoroalkylacrylate copolymers with good transmission of short-wavelength radiation and reduced development defects)

IT **209482-18-8**
(**photoacid** generator; chem. amplified **photoresists** contg. adamantyl fluoroalkylacrylate copolymers with good transmission of short-wavelength radiation and reduced development defects)

L46 ANSWER 15 OF 36 HCA COPYRIGHT 2005 ACS on STN
140:10622 Chemically amplified **photoresist** compositions with excellent transmission of short-wavelength radiation and reduced development defects. Shima, Motoyuki; Sakakibara, Hirokazu; Nishimura, Isao; Nishimura, Yukio (JSR Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003337416 A2 20031128, 39 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-144620 20020520.

GI



I

AB The compns., useful for **photolithog.** using radiation of wavelength .ltoreq.200 nm, contain radiation-sensitive **photoacid** generators [PGA; which **generate acids** I; X1, X2 = H, F, C1-4 linear or branched (fluoro)alkyl; i = 0-5; R1 = monovalent hydrocarbyl; j .gtoreq.0; m = 0-2] and alkali-insol. polymers (which become alkali-sol. on reaction with acids) having repeating units II (R1 = monovalent group; n = 0-2) and/or CR3(C:OOR4)CH2 (R3 = H, Me, C1-4 linear or branched hydroxyalkyl or fluoroalkyl; R4 = H, monovalent org. group).

IT **479628-19-8P**

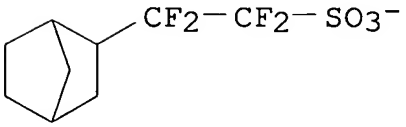
(PAG; chem. amplified **photoresists** contg. specific PAG with good transmission of short-wavelength radiation and reduced development defects)

RN 479628-19-8 HCA

CN Thiophenium, tetrahydro-1-(4-hydroxy-3,5-dimethylphenyl)-, salt with .alpha.,.alpha.,.beta.,.beta.-tetrafluorobicyclo[2.2.1]heptane-2-ethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

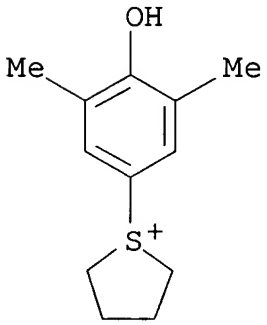
CM 1

CRN 474516-37-5
CMF C9 H11 F4 O3 S



CM 2

CRN 330576-57-3
CMF C12 H17 O S



IT **627528-41-0**
(for PAG prepn.; chem. amplified **photoresists** contg. specific PAG with good transmission of short-wavelength radiation and reduced development defects)

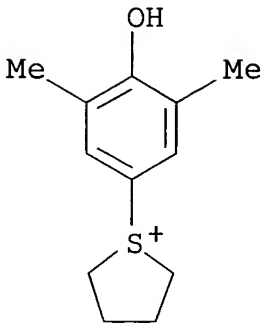
RN 627528-41-0 HCA

CN Thiophenium, tetrahydro-1-(4-hydroxy-3,5-dimethylphenyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

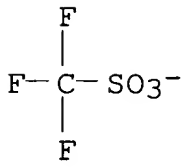
CRN 330576-57-3

CMF C12 H17 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



IC ICM G03F007-039
ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST radiation sensitive polymer far UV transmission; **photoresist** chem amplification sulfonium **photoacid** generator; wafer defect redn **photoresist** excimer laser

IT **Photoresists**
(chem. amplified **photoresists** contg. specific PAG with good transmission of short-wavelength radiation and reduced development defects)

IT **Photolithography**
(far UV; chem. amplified **photoresists** contg. specific PAG with good transmission of short-wavelength radiation and reduced development defects)

IT 474516-38-6P 479628-14-3P **479628-19-8P** 479628-20-1P
(PAG; chem. amplified **photoresists** contg. specific PAG with good transmission of short-wavelength radiation and reduced development defects)

IT 340964-38-7P
(chem. amplified **photoresists** contg. specific PAG with

good transmission of short-wavelength radiation and reduced development defects)

IT 213901-06-5 231296-44-9
(chem. amplified **photoresists** contg. specific PAG with good transmission of short-wavelength radiation and reduced development defects)

IT 135074-42-9P 474516-55-7P 627528-39-6P 627528-40-9P
(for PAG prepn.; chem. amplified **photoresists** contg. specific PAG with good transmission of short-wavelength radiation and reduced development defects)

IT 77-73-6, Dicyclopentadiene 1600-44-8, Tetramethylenesulfoxide 4270-70-6, Triphenylsulfonium chloride 18599-22-9 20900-19-0, 1-Butoxynaphthalene 21715-90-2 61358-24-5 **627528-41-0**
(for PAG prepn.; chem. amplified **photoresists** contg. specific PAG with good transmission of short-wavelength radiation and reduced development defects)

L46 ANSWER 16 OF 36 HCA COPYRIGHT 2005 ACS on STN
139:388469 Thionium salt **photoacid** generators for chemically amplified **resists** and patterning method using the same. Osawa, Yoichi; Nishi, Tsunehiro; Kobayashi, Tomohiro (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003322964 A2 20031114, 36 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-129876 20020501.

AB The **photoacid** generators R1R2S+CH2R3C:CR4R5.Y- (I; R1, R2 = C1-6 unsubstituted or O-contg. alkyl; R3-R5 = H, C1-6 alkyl, C6-12 aryl; .gtoreq.1 of R3-R5 are C6-12 aryl; Y- = C1-10 alkylsulfonate, C6-20 arylsulfonate, C2-10 bisalkylsulfonylimide, C3-12 trisalkylsulonylmethide) or R1R2S+CH2C6H5-nR7n.Y- (II; R1, R2, Y- = same as above; R7 = H, C1-6 alkyl, C1-6 alkoxy, NO2, F, Cl; n = 1-5), and pos. **resists** contg. I or II and resins increasing alkali soly. by acid action are sep. claimed. UV (.ltoreq.250 nm) or electron-beam lithog. on the **resists**, producing submicron pattens with good edge sharpness, is further claimed.

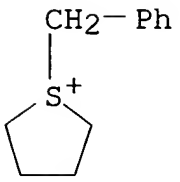
IT **343775-57-5P 623932-16-1P**
(chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)

RN 343775-57-5 HCA

CN Thiophenium, tetrahydro-1-(phenylmethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 46116-19-2
CMF C11 H15 S



CM 2

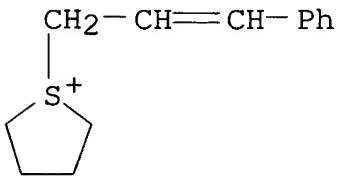
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 623932-16-1 HCA
CN Thiophenium, tetrahydro-1-(3-phenyl-2-propenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 151231-03-7
CMF C13 H17 S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

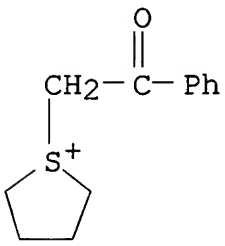
$^{-}O_3S-(CF_2)_3-CF_3$

IT **301664-71-1**
(chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)
RN 301664-71-1 HCA

CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-004
ICS G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 29, 38

ST thionium salt **photoacid** generator pos chem amplified **resist**; submicron UV **photolithog** thiacyclopentanium salt **photoacid** generator; electron beam lithog thionium salt **photoacid** generator

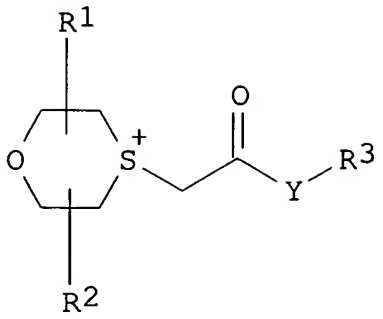
IT Positive **photoresists**
(UV; chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)

IT Catalysts
(photochem.; chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)

IT Electron beam **resists**
(pos.-working; chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)

IT **Photolithography**
(submicron UV; chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)
IT Electron beam lithography
(submicron; chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)
IT 155040-27-0 301153-46-8 326925-68-2 330596-02-6 330596-03-7
485819-02-1 490040-72-7 595558-21-7 601520-54-1 601520-62-1
623932-20-7 623932-22-9 623932-23-0 623932-24-1 623932-26-3
623932-27-4 623932-29-6 623932-30-9 623932-32-1 623932-33-2
623932-35-4 623932-36-5 623932-37-6 623932-39-8 623932-41-2
(assumed monomers; chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)
IT **343775-57-5P 623932-16-1P** 623932-17-2P
623932-18-3P 623932-19-4P
(chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)
IT 39153-56-5 144317-44-2 197447-16-8 227199-92-0
301664-71-1
(chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)
IT 60872-03-9P
(chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)
IT 98-59-9, p-Toluenesulfonyl chloride 98-67-9, 4-Phenolsulfonic acid
100-39-0, Benzyl bromide 110-01-0, Tetrahydrothiophene
4392-24-9, Cinnamyl bromide 29420-49-3, Potassium perfluorobutanesulfonate 152894-10-5
(chem. amplified pos. **resists** contg. thionium salt **photoacid** generators for submicron UV or electron-beam lithog.)

L46 ANSWER 17 OF 36 HCA COPYRIGHT 2005 ACS on STN
139:388463 **Photoacid** generator for chemically amplified **photoresist** material and method for pattern formation using the same. Kobayashi, Tomohiro; Watanabe, Satoshi; Nishi, Tsunehiro; Osawa, Yoichi; Kobayashi, Katsuhiro (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003321466 A2 20031111, 47 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-129559 20020501.
GI



I

AB The **photoacid** has general structure I(R1-2 = H, C1-8 alkyl; Y = single bond, O, N, C1-4 alkylene; R3 = C1-8 alkyl, C6-16 aryl; X- = C1-20 non-nucleophilic counter ion). The **photoacid** generator shows the good heat-resistance and the good storageability and provides **photoresists** of high sensitivity, high resoln., good pattern profile.

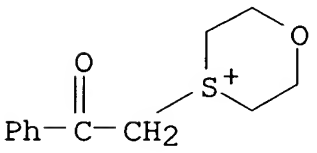
IT **623147-96-6P**
(**photoacid** generator for chem. amplified **photoresist** material)

RN 623147-96-6 HCA

CN 1,4-Oxathianium, 4-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

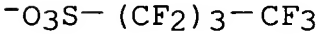
CM 1

CRN 623147-95-5
CMF C12 H15 O2 S



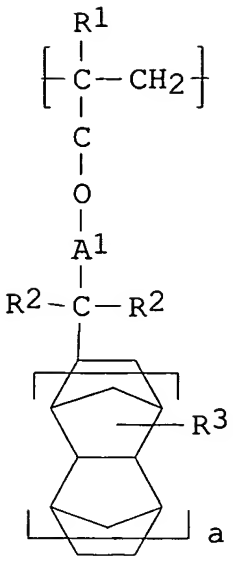
CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

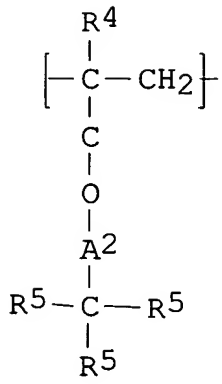


IC ICM C07D327-06
ICS G03F007-004; G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 28
ST **photoacid** generator amplified **photoresist**
IT **Photolithography**
Photoresists
(**photoacid** generator for chem. amplified **photoresist** material and method for pattern formation using the same)
IT Light-sensitive materials
(**photoacid** generator; **photoacid** generator for chem. amplified **photoresist** material and method for pattern formation using the same)
IT 70-11-1, .alpha.-Bromoacetophenone 98-67-9, 4-Phenolsulfonic **acid** 104-15-4, p-Toluenesulfonic **acid**, reactions 15980-15-1, 1,4-Thioxane 29420-49-3, Potassium nonafluorobutanesulfonate
(**photoacid generator** for chem. amplified **photoresist** material)
IT 15240-15-0DP, Benzenesulfonic acid,4-[[(4-methylphenyl)sulfonyl]oxy]-, sodium salt
(**photoacid** generator for chem. amplified **photoresist** material)
IT 5469-26-1P, 1-Bromo-3,3-dimethyl-2-butanone **623147-96-6P** 623147-97-7P 623147-99-9P
(**photoacid** generator for chem. amplified **photoresist** material)

L46 ANSWER 18 OF 36 HCA COPYRIGHT 2005 ACS on STN
139:343483 Radiation-sensitive resin composition. Nishimura, Yukio; Ishii, Hiroyuki; Yamamoto, Masafumi; Nishimura, Isao (Japan). U.S. Pat. Appl. Publ. US 2003203309 A1 20031030, 26 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-386707 20030313. PRIORITY: JP 2002-71696 20020315.
GI



I



II

AB A radiation-sensitive resin compn. suitable as a chem. amplified **resist** useful for microfabrication comprises: (A) a resin insol. or scarcely sol. in alkali, but becomes alkali sol. by the action of an acid and (B) a **photoacid** generator. The resin comprises at least one recurring unit of the following formula I (R1 = H, methyl; A1 = single bond, X1-COO-; X1 = methylene, alkylene with less with 10 carbon atoms; R2 = C1-6 alkyl; n = 0, 1; R3 = H, C1-6 alkyl, oxygen contg. group), II (R4 = H, methyl; A2 = single bond, X2-COO-; X2 = methylene, alkylene with less with 10 carbon atoms; R5 = C1-4 alkyl, C4-20 monovalent alicycli hydrocarbon group).

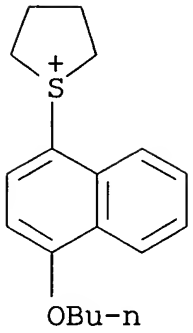
IT **209482-18-8 330576-58-4**
(**acid generator**; radiation-sensitive resin compn. for microfabrication contg.)

RN 209482-18-8 HCA

CN Thiophenium, 1-(4-butoxy-1-naphthalenyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 209482-14-4
CMF C18 H23 O S



CM 2

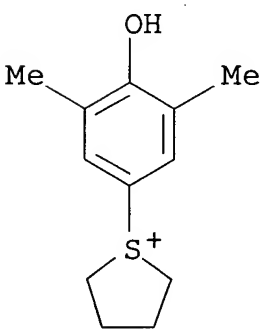
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 330576-58-4 HCA
CN Thiophenium, tetrahydro-1-(4-hydroxy-3,5-dimethylphenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 330576-57-3
CMF C12 H17 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

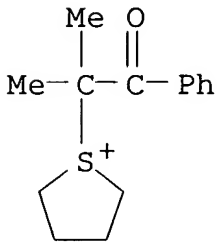
$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-039
NCL 430270100; 430921000; 430925000; 430945000; 430966000; 430942000; 430323000; 430326000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST microfabrication **photoresist** radiation sensitive resin compn
IT **Photolithography**
Photoresists
(radiation-sensitive resin compn. for)
IT 144317-44-2, Triphenylsulfonium nonafluoro-n-butanesulfonate
209482-18-8 330576-58-4
(**acid generator**; radiation-sensitive resin compn. for microfabrication contg.)

L46 ANSWER 19 OF 36 HCA COPYRIGHT 2005 ACS on STN
139:314532 Radiation sensitive composition and compound. Kodama, Kunihiko (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1353225 A2 20031015, 99 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2003-7989 20030410. PRIORITY: JP 2002-108104 20020410; JP 2002-240661 20020821.
AB The present invention relates to a stimulation sensitive compn. used for a semiconductor prodn. process such as IC, a liq. crystal, the prodn. of a circuit substrate such as a thermal head, further, other **photo** application system, **lithog**. printing, an acid curing compn., a radical curing compn. and the like. The present invention relates to a stimulation sensitive compn. comprising: (A) a compd. represented by: ArC(=O)CR6R7S+Y1Y2 X- (Ar = aryl or arom. group contg. a hetero atom; R6 = H, cyano, alkyl, aryl group; R7 = monovalent org. group; Y1,2 = alkyl, aryl, aralkyl, etc.; X- = non-nucleophilic anion) which is capable of **generating** an **acid** or a radical by stimulation from the external. (B) a resin.
IT **470482-89-4P**
(**acid generating** agent; radiation sensitive **resist** compn. for semiconductor prodn. process contg.)
RN 470482-89-4 HCA
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3
CMF C14 H19 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

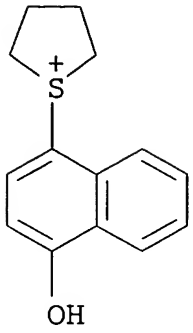
$^{-}O_3S-(CF_2)_3-CF_3$

IT **220475-58-1 301664-71-1 301664-72-2**
398141-19-0 474510-76-4 610301-08-1
610301-13-8 610301-18-3 610301-21-8
610301-26-3 610301-30-9 610301-34-3
610301-36-5 610301-38-7 610301-40-1
610301-42-3 610301-44-5 610301-46-7
(**acid generating** agent; radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

RN 220475-58-1 HCA
CN Thiophenium, tetrahydro-1-(4-hydroxy-1-naphthalenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 51843-75-5
CMF C14 H15 O S



CM 2

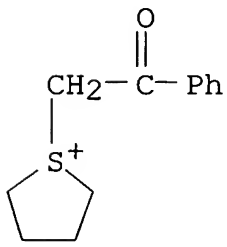
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 301664-71-1 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

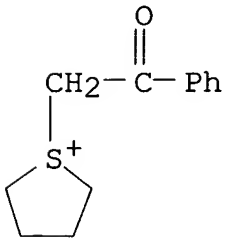
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 301664-72-2 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

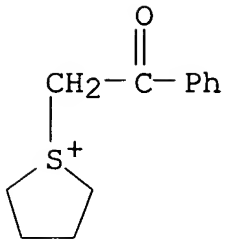
CRN 45298-90-6
CMF C8 F17 O3 S

$^{-}O_3S-(CF_2)_7-CF_3$

RN 398141-19-0 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

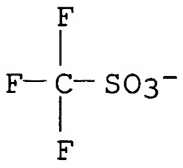
CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

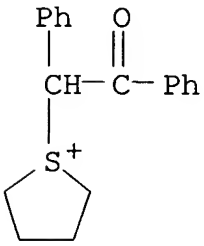
CRN 37181-39-8
CMF C F3 O3 S



RN 474510-76-4 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-1,2-diphenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 85629-08-9
CMF C18 H19 O S



CM 2

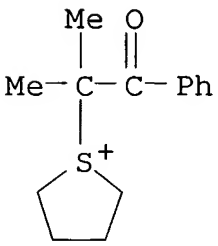
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-08-1 HCA
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3
CMF C14 H19 O S



CM 2

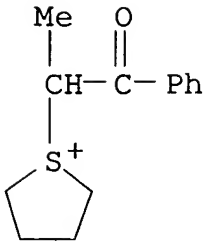
CRN 45298-90-6
CMF C8 F17 O3 S

$^{-}O_3S-(CF_2)_7-CF_3$

RN 610301-13-8 HCA
CN Thiophenium, tetrahydro-1-(1-methyl-2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 85629-06-7
CMF C13 H17 O S



CM 2

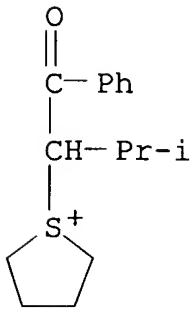
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-18-3 HCA
CN Thiophenium, 1-(1-benzoyl-2-methylpropyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-17-2
CMF C15 H21 O S



CM 2

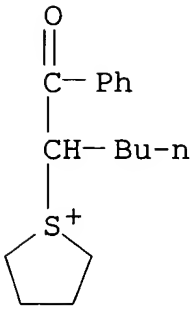
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-21-8 HCA
CN Thiophenium, 1-(1-benzoylpentyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-20-7
CMF C16 H23 O S



CM 2

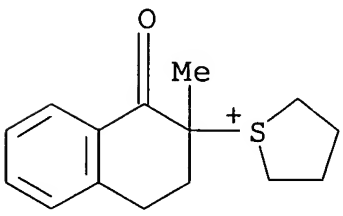
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-26-3 HCA
CN Thiophenium, tetrahydro-1-(1,2,3,4-tetrahydro-2-methyl-1-oxo-2-naphthalenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 477327-87-0
CMF C15 H19 O S



CM 2

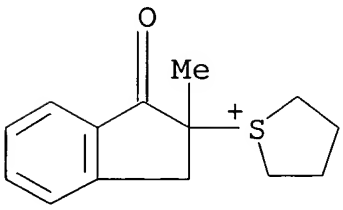
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-30-9 HCA
CN Thiophenium, 1-(2,3-dihydro-2-methyl-1-oxo-1H-inden-2-yl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-29-6
CMF C14 H17 O S



CM 2

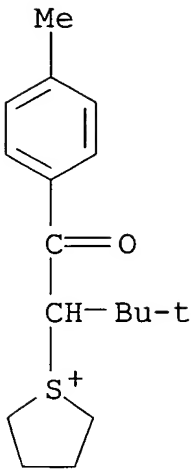
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-34-3 HCA
CN Thiophenium, 1-[2,2-dimethyl-1-(4-methylbenzoyl)propyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-33-2
CMF C17 H25 O S



CM 2

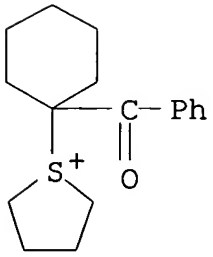
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-36-5 HCA
CN Thiophenium, 1-(1-benzoylcyclohexyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-35-4
CMF C17 H23 O S



CM 2

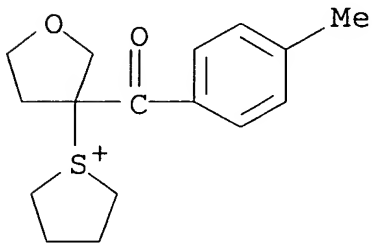
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-38-7 HCA
CN Thiophenium, tetrahydro-1-[tetrahydro-3-(4-methylbenzoyl)-3-furanyl]-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-37-6
CMF C16 H21 O2 S



CM 2

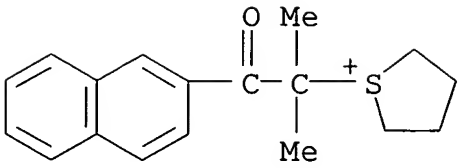
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-40-1 HCA
CN Thiophenium, 1-[1,1-dimethyl-2-(2-naphthalenyl)-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-39-8
CMF C18 H21 O S



CM 2

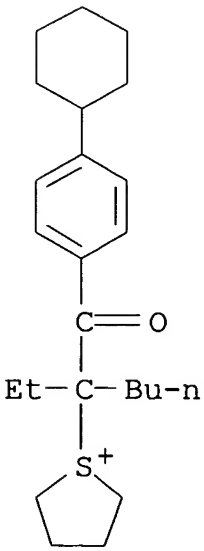
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-42-3 HCA
CN Thiophenium, 1-[1-(4-cyclohexylbenzoyl)-1-ethylpentyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-41-2
CMF C24 H37 O S



CM 2

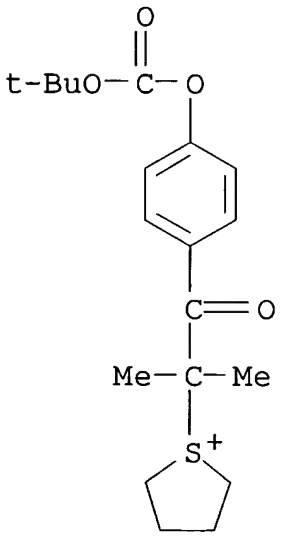
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-44-5 HCA
CN Thiophenium, 1-[2-[4-[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-43-4
CMF C19 H27 O4 S



CM 2

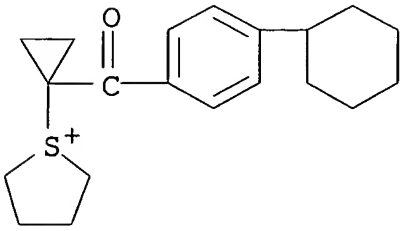
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 610301-46-7 HCA
CN Thiophenium, 1-[1-(4-cyclohexylbenzoyl)cyclopropyl]tetrahydro-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

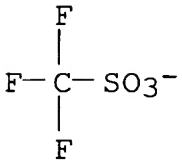
CM 1

CRN 610301-45-6
CMF C20 H27 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



IC ICM G03F007-004
ICS G03F007-039; G03F007-038; C07C323-22
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST lithog printing radiation sensitive **resist** compn
IT Lithography
(radiation sensitive **resist** compn. for semiconductor prodn. process)
IT **Resists**
(radiation-sensitive; radiation sensitive compn. and compd. for)
IT **470482-89-4P** 610301-07-0P
(**acid generating** agent; radiation sensitive **resist** compn. for semiconductor prodn. process contg.)
IT 66003-78-9 133710-62-0 138529-81-4 144317-44-2 193345-23-2 197447-16-8 **220475-58-1** 227199-92-0 241806-75-7 258341-98-9 258872-05-8 284474-28-8 301153-77-5 **301664-71-1** **301664-72-2** 347193-28-6 389859-76-1 391232-40-9 398141-17-8 398141-18-9 **398141-19-0** **474510-76-4** 592544-87-1 **610301-08-1** 610301-09-2 610301-10-5 610301-12-7 **610301-13-8** 610301-14-9 610301-16-1 **610301-18-3**

610301-19-4 **610301-21-8** 610301-23-0 610301-25-2
610301-26-3 610301-28-5 **610301-30-9**
610301-32-1 **610301-34-3** **610301-36-5**
610301-38-7 **610301-40-1** **610301-42-3**
610301-44-5 **610301-46-7** 610301-47-8
610301-48-9
(**acid generating** agent; radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

IT 75-77-4, Chlorotrimethylsilane, reactions 513-36-0 827-52-1, Phenylcyclohexane 1600-44-8, Tetramethylenesulfoxide 2168-93-6, Dibutylsulfoxide 13547-70-1 20907-24-8
(prepn. of radiation sensitive **resist** compn. for semiconductor prodn. process)

IT 5195-24-4P 56346-00-0P
(prepn. of radiation sensitive **resist** compn. for semiconductor prodn. process)

IT 24979-69-9P 24979-70-2P, VP-5000 143336-94-1P 185405-14-5P 250378-10-0P, Butyrolactone methacrylate-2-Ethyl-2-adamantyl methacrylate copolymer 289623-64-9P 312620-54-5P 321164-59-4P 345212-27-3P 359635-35-1P 370102-83-3P 370866-39-0P 391232-36-3P 391613-77-7P 398140-43-7P 398140-45-9P 398140-57-3P 398140-59-5P 398140-68-6P 398140-69-7P 398140-77-7P 405509-19-5P 406702-00-9P 430437-18-6P 459418-30-5P 471257-28-0P 482609-97-2P 508210-04-6P 515876-73-0P 521303-15-1P 521303-16-2P 524699-47-6P 574735-94-7P 607710-65-6P 607710-66-7P 607710-67-8P 607710-68-9P 607710-69-0P 607710-70-3P 607710-71-4P 607710-72-5P 607710-73-6P 607710-76-9P 607710-77-0P 610300-92-0P 610300-93-1P 610300-94-2P 610300-95-3P 610300-96-4P 610300-97-5P 610300-98-6P 610301-00-3P 610301-01-4P 610301-03-6P 610301-04-7P 610301-05-8P
(radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

IT 129674-22-2 158593-28-3 177034-75-2 200808-68-0 325143-38-2 372968-15-5 610301-49-0 610301-50-3
(radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

IT 120-07-0, N-Phenyldiethanolamine 484-47-9, 2,4,5-Triphenylimidazole 621-77-2, Tripentylamine 1116-76-3, Tri-n-octylamine 1672-63-5, 4-Hydroxyantipyrine 2052-49-5, Tetrabutylammonium hydroxide 3001-72-7, 1,5-Diazabicyclo[4,3,0]non-5-ene 3040-44-6, 1-Piperidineethanol 19293-63-1, Dicyclohexylmethylamine 19600-49-8, Triphenylsulfonium acetate 24544-04-5, 2,6-Diisopropylaniline 70384-51-9
(radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

L46 ANSWER 20 OF 36 HCA COPYRIGHT 2005 ACS on STN

139:252519 Negative **photoresist** compositions with excellent alkali-developing properties. Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003262959 A2 20030919, 90 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-65443 20020311.

AB The compns., useful for **photolithog.** using excimer lasers or EUV radiation sources, contain **photoacid** generators (A), alkali-sol. polymers (B), acid-labile crosslinking agents (C), and fluoroaliph. group-contg. polymers (D) derived from monomers C:CR1C:OX(CH2)m(CF2CF2)nF (R1 = H, Me; X = O, S, NR2; R2 = H, C1-4 alkyl; m = 1-6; n = 2-4). The compns. give patterns with reduced defects.

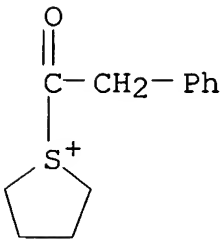
IT **600168-24-9**
(**photoacid** generator; neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

RN 600168-24-9 HCA

CN Thiophenium, tetrahydro-1-(phenylacetyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 600168-23-8
CMF C12 H15 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-038
ICS C08F020-22; C08F020-38; C08F020-56; G03F007-004; G03F007-033; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electron beam **photoresist** development defect free; **photoresist** neg fluoroaliph polymer **photolithog**

IT Polymers, uses
(fluoroaliph. group-contg.; neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

IT Negative **photoresists**
(neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

IT Phenolic resins, uses
(novolak, cresol-based, alkali-sol. polymer; neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

IT 105649-65-8DP, 3-tert-Butoxystyrene homopolymer, hydrolyzed 425422-24-8DP, 3,4-Dimethoxystyrene-4-tert-butoxystyrene copolymer, hydrolyzed
(alkali-sol. polymer; neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

IT 24979-70-2, Poly(p-hydroxystyrene) 24979-74-6 149614-53-9 202829-91-2 321164-59-4 345212-27-3 345212-30-8 345212-56-8 345212-61-5 345212-78-4 345212-82-0 345212-92-2 405893-14-3 501371-38-6 600168-21-6
(alkali-sol. polymer; neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

IT 161679-94-3P
(crosslinking agent; neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

IT 3089-11-0 185502-11-8 185502-14-1 185502-15-2 197087-74-4
(crosslinking agent; neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

IT 162846-57-3P
(for crosslinking agent prepn.; neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

IT 110726-28-8, Trisp PA
(for crosslinking agent prepn.; neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

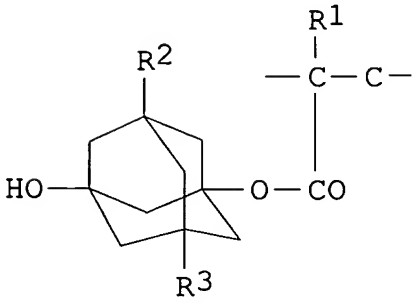
IT 600168-39-6
(neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

IT 66003-78-9 133710-62-0 138529-84-7 160481-39-0 241806-75-7 258872-05-8 284474-28-8 389859-76-1 391232-40-9 398141-18-9 **600168-24-9**
(**photoacid** generator; neg. **photoresists** for **photolithog.** giving patterns with reduced defects)

L46 ANSWER 21 OF 36 HCA COPYRIGHT 2005 ACS on STN
137:391079 Positively-working **photoresist** composition containing polymer containing acrylate repeating unit with adamantyl group. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn.

Kokai Tokkyo Koho JP 2002341540 A2 20021127, 107 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 2001-149861 20010518.

GI



I

AB The title compn. contains a resin increasing the soly. towards an alkali developer by reacting with an acid and an actinic ray or radiation-sensitive **acid generator**, wherein the resin contains repeating unit I(R1a = H, halo, alkyl, cyano; R2a-3a = H, C1-4 alkyl, hydroxy). The compn. provides the **photoresists**, which are suitable for micron **photolithog.** and have good pattern profile.

IT **206861-54-3 301664-71-1 307976-40-5 398141-23-6**
(**acid generator**; pos.-working **photoresist** compn.)

RN 206861-54-3 HCA

CN Dibenzothiophenium, 5-phenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

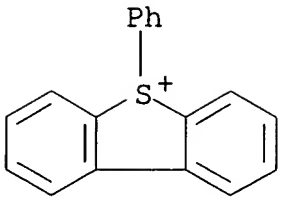
CM 1

CRN 45298-90-6
CMF C8 F17 O3 S

$^{-}O_3S-(CF_2)_7-CF_3$

CM 2

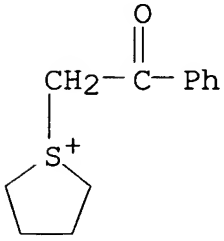
CRN 38347-29-4
CMF C18 H13 S



RN 301664-71-1 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

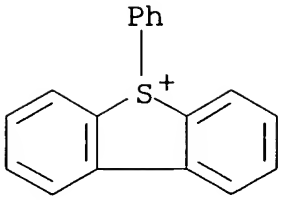
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 307976-40-5 HCA
CN Dibenzothiophenium, 5-phenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

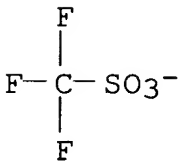
CM 1

CRN 38347-29-4
CMF C18 H13 S



CM 2

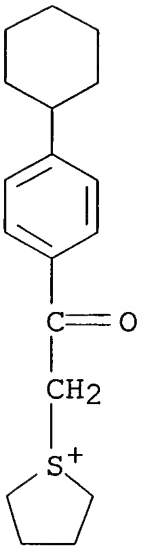
CRN 37181-39-8
CMF C F3 O3 S



RN 398141-23-6 HCA
CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 398141-22-5
CMF C18 H25 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-039
ICS C08F020-28; C08F022-06; C08F022-40; C08F032-00; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST pos **photoresist** compn polymer acrylate
IT Positive **photoresists**
(pos.-working **photoresist** compn.)
IT 59626-70-9 81416-37-7 133710-62-0 144089-15-6 144317-44-2
206861-54-3 211517-08-7 241806-75-7 252937-66-9
258341-99-0 258342-00-6 258872-05-8 284474-28-8 301153-76-4
301525-08-6 **301664-71-1** 307531-76-6 **307976-40-5**
338445-30-0 391232-40-9 **398141-23-6** 454471-05-7
(**acid generator**; pos.-working **photoresist** compn.)
IT 476312-23-9P 476312-24-0P 476312-26-2P 476312-29-5P
476312-30-8P 476312-32-0P 476312-33-1P 476312-34-2P
476312-35-3P 476312-36-4P 476312-37-5P 476312-38-6P
476312-39-7P 476312-40-0P 476312-41-1P 476312-42-2P
476312-43-3P 476312-44-4P 476312-46-6P 476312-47-7P

476312-48-8P 476312-49-9P 476312-50-2P 476312-51-3P
476312-52-4P 476312-53-5P 476312-54-6P 476312-55-7P
476312-57-9P
(resin; pos.-working **photoresist** compn.)

L46 ANSWER 22 OF 36 HCA COPYRIGHT 2005 ACS on STN
137:343898 Method for structuring **photoresist** layer. Richter, Ernst-Christian; Sebald, Michael (Infineon Technologies AG, Germany). U.S. Pat. Appl. Publ. US 2002160318 A1 20021031, 9 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-134151 20020429. PRIORITY: DE 2001-10120676 20010427.

AB A **photoresist** layer structuring process includes a substrate with a **photoresist** layer applied in parts. The **photoresist** layer includes a film-forming polymer having mol. groups convertable into alkali-sol. groups by acid-catalyzed cleavage reactions. The polymer includes a **photoacid generator** liberating an **acid** on exposure to light in a wavelength range, and a photobase generator liberating a base on exposure to light in a wavelength range. First, the **photoresist** layer is exposed to light from the second range, the light wavelength being chosen so that the **photoacid** generator is substantially inert to the irradn., and is exposed to light from the first range, the light wavelength being chosen so that the photobase generator is substantially inert to the irradn. The **photoresist** layer is then heated to a temp. at which the cleavage reaction catalyzed by the photolytically produced acid takes place, and finally the **photoresist** layer is developed. The present invention provides a method by which highly accurate transfer of the structure predetd. by the lithog. **mask** to a **photoresist** layer is achieved.

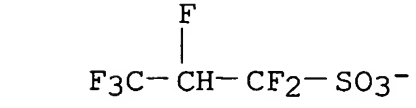
IT **328238-38-6**
(thermoacid generator; method for structuring **photoresist** layer)

RN 328238-38-6 HCA

CN Thiophenium, tetrahydro-1-(phenylmethyl)-, salt with 1,1,2,3,3,3-hexafluoro-1-propanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

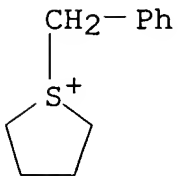
CM 1

CRN 172870-67-6
CMF C3 H F6 O3 S



CM 2

CRN 46116-19-2
CMF C11 H15 S



IC ICM G03C005-00
NCL 430324000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **photolithog** method structuring **photoresist** layer
IT **Photolithography**
(method for structuring **photoresist** layer)
IT 75-59-2, Tetramethylammonium hydroxide
(developer; method for structuring **photoresist** layer)
IT 3406-03-9, Phenylacyl phenyl sulfone 57212-70-1 121172-98-3, 4-Nitrobenzyl 9,10-dimethoxyanthracene-2-sulfonate
(**photoacid** generator; method for structuring **photoresist** layer)
IT 119137-03-0, O-Nitrobenzyl N-cyclohexylcarbamate 168697-84-5, O-Phenylacetyl-2-acetonaphthone oxime
(photobase generator; method for structuring **photoresist** layer)
IT 20444-09-1, 2-Nitrobenzyl tosylate **328238-38-6**
(thermoacid generator; method for structuring **photoresist** layer)

L46 ANSWER 23 OF 36 HCA COPYRIGHT 2005 ACS on STN
137:343897 Process for structuring **photoresist** layer.
Richter, Ernst-Christian; Sebald, Michael (Infineon Technologies AG, Germany). U.S. Pat. Appl. Publ. US 2002160316 A1 20021031, 7 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-134105 20020429. PRIORITY: DE 2001-10120673 20010427.
AB A method for structuring a **photoresist** layer includes the steps of providing a substrate on which a **photoresist** layer has been applied at least in some areas. The **photoresist** layer includes a film-forming polymer that contains mol. groups that can be converted into alkali-sol. groups by acid-catalyzed elimination reactions. The polymer further includes a photobase generator that, on exposure to light from a defined wavelength range, releases a base. The polymer addnl.

includes a thermoacid generator that releases an acid when the temp. is raised. The **photoresist** layer is initially exposed, in some areas, to light from the defined wavelength range. The **photoresist** layer is then heated to a temp. at which the thermoacid **generator** releases an **acid** and the acid-catalyzed elimination reaction takes place. Finally, the **photoresist** layer is developed. The present invention provides a process by which high transfer accuracy of the structure predetd. by the lithog. **mask** into a **photoresist** layer is achieved.

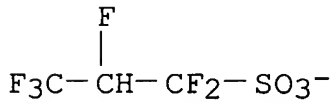
IT **328238-38-6**
(thermoacid generator; process for structuring **photoresist** layer)

RN 328238-38-6 HCA

CN Thiophenium, tetrahydro-1-(phenylmethyl)-, salt with 1,1,2,3,3,3-hexafluoro-1-propanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

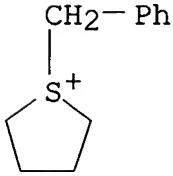
CM 1

CRN 172870-67-6
CMF C3 H F6 O3 S



CM 2

CRN 46116-19-2
CMF C11 H15 S



IC ICM G03C005-56
NCL 430324000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST process structuring **photoresist** layer **photolithog**
IT **Photolithography**
(process for structuring **photoresist** layer)

IT 75-59-2, Tetramethylammonium hydroxide
(developer; process for structuring **photoresist** layer)
IT 119137-03-0, O-Nitrobenzyl N-cyclohexyl carbamate 168697-84-5, O-Phenylacetyl 2-acetonaphthone oxime
(**photoacid** generator; process for structuring **photoresist** layer)
IT 20444-09-1, 2-Nitrobenzyl tosylate **328238-38-6**
(thermoacid generator; process for structuring **photoresist** layer)

L46 ANSWER 24 OF 36 HCA COPYRIGHT 2005 ACS on STN
137:317924 Perfluoroalkylsulfonic acid compounds for **photoresists**. Ferreira, Lawrence; Blakeney, Andrew J.; Spaziano, Gregory Dominic; Dimov, Ognian; Kocab, Thomas J.; Hatfield, John P. (Arch Specialty Chemicals, Inc., USA). PCT Int. Appl. WO 2002082185 A1 20021017, 81 pp. DESIGNATED STATES: W: JP, KR, SG; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US10800 20020405. PRIORITY: US 2001-PV281652 20010405.
AB The present invention relates to a **photoacid** compd. that produce a fluorinated alkyl sulfonic acid having a short perfluoroalkyl chain attached to an ether linkage. The invention **photoacid** has general structure: R-O(CF2)nSO3X (n = 1-4; R = C1-C12 alkyl or alkenyl, araalkyl, aryl, bicycloalkyl, tricycloalkyl, H, alkyl sulfonic acid, perfluoroalkyl, general structure F((CF2)pO)m(CF2)q-; p = 1-4; m = 0-3; q = 1-4; etc.; X = org. cations and covalently bonded org. radicals). The present invention relates **photoresist** compn comprising such **photoacid** generator compd.
IT **414911-37-8 470701-68-9**
(**photoacid** for **photoresists** compn. and **photolithog.**)
RN 414911-37-8 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2-tetrafluoro-2-(pentafluoroethoxy)ethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

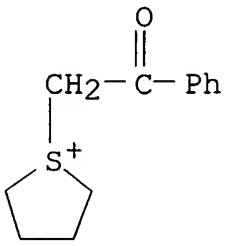
CM 1

CRN 220689-13-4
CMF C4 F9 O4 S

$^{-}O_3S-CF_2-CF_2-O-CF_2-CF_3$

CM 2

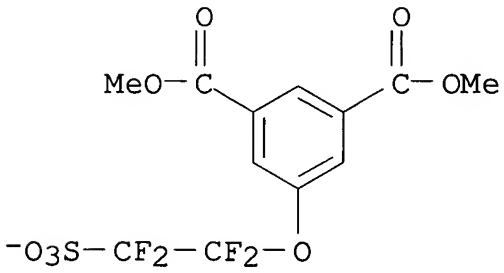
CRN 58162-29-1
CMF C12 H15 O S



RN 470701-68-9 HCA
CN Thiophenium, tetrahydro-1-(4-methoxy-1-naphthalenyl)-, salt with 1,3-dimethyl 5-(1,1,2,2-tetrafluoro-2-sulfoethoxy)-1,3-benzenedicarboxylate (1:1) (9CI) (CA INDEX NAME)

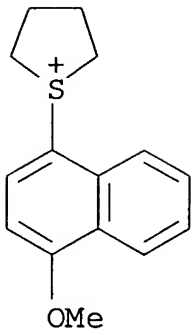
CM 1

CRN 470701-67-8
CMF C12 H9 F4 O8 S



CM 2

CRN 209482-12-2
CMF C15 H17 O S



IC ICM G03F007-004
ICS C07C303-00; C07C309-01; C07C309-02; C07C309-06; C07C309-63
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoacid** perfluoroalkylsulfonic acid compd **photoresists** compn
IT Named reagents and solutions
(Eaton's; prepn. of **photoacid** for **photoresists** compn. and **photolithog.**)
IT **Photolithography**
Photoresists
(perfluoroalkylsulfonic acid compds. for **photoresists**)
IT 414911-33-4P 470701-59-8P 470701-60-1P 470701-62-3P 470701-63-4P
(**photoacid** for **photoresists** compn. and **photolithog.**)
IT 359414-76-9P 470701-56-5P
(**photoacid** for **photoresists** compn. and **photolithog.**)
IT 414911-40-3P
(**photoacid** for **photoresists** compn. and **photolithog.**)
IT **414911-37-8** 414911-81-2 470701-66-7 **470701-68-9** 470701-69-0 470701-71-4 470701-72-5 470701-73-6 470701-74-7 470701-75-8 470701-77-0 470701-78-1 470701-79-2 470701-80-5 470701-82-7 470701-83-8 470701-85-0 470701-86-1 470710-22-6
(**photoacid** for **photoresists** compn. and **photolithog.**)
IT 406722-69-8P, Maleic anhydride-1-methylcyclohexyl acrylate-norbornene copolymer
(**photoresists** contg. perfluoroalkylsulfonic acid compds. and resin)
IT 926-02-3DP, Tert-Butyl vinyl ether, reaction product with hydroxystyrene polymer 4442-79-9DP, 2-Cyclohexylethanol, reaction

product with hydroxystyrene polymer 247150-84-1DP, tert-Butylstyrene-hydroxystyrene copolymer, reaction product with Bu vinyl ether and cyclohexylethanol
(**photoresists** contg. perfluoroalkylsulfonic acid compds. and resin)

IT 108-67-8, 1,3,5-Trimethylbenzene, reactions 945-51-7, Diphenylsulfoxide 1126-79-0, n-Butyl phenyl ether 87136-78-5 113507-82-7 313045-63-5, Tris-(tert-butylphenyl)sulfonium tetrafluoroborate 330562-45-3
(prepn. of **photoacid** for **photoresists** compn. and **photolithog.**)

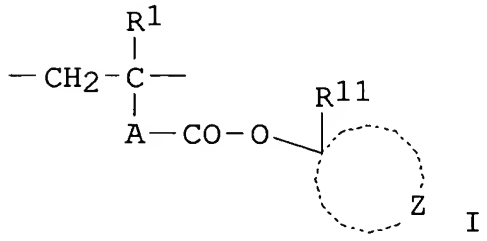
IT 139767-18-3P 470701-57-6P
(prepn. of **photoacid** for **photoresists** compn. and **photolithog.**)

IT 58162-29-1 209482-12-2 301153-76-4 371921-64-1 470701-64-5
(sulfonium cation; prepn. of **photoacid** for **photoresists** compn. and **photolithog.**)

L46 ANSWER 25 OF 36 HCA COPYRIGHT 2005 ACS on STN

137:317917 Chemically amplified positive **photoresists** for microphotofabrication using deep UV aligners. Sato, Kenichiro; Uenishi, Kazuya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002303978 A2 20021018, 51 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-107305 20010405.

GI



I

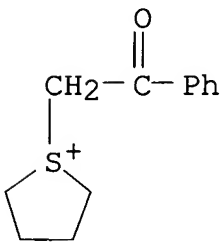
AB The **photoresists**, showing less dependency of pattern sharpness on d. and less surface roughening in etching, comprise (A) two kinds of alicyclic hydrocarbyl-branched resins I and [CH2CR1(ACO2CR12R13R14)] (R1 = H, alkyl; A = bridging group; R11 = C1-4 alkyl; Z = alicyclic hydrocarbyl; R12-14 = hydrocarbyl essentially including alicyclic one) and (B) radiation-sensitive **acid generators**.

IT **398141-19-0**
(**photoacid** generators; chem. amplified pos. **photoresists** contg. two different polymers with alicyclic hydrocarbyl pendants)

RN 398141-19-0 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

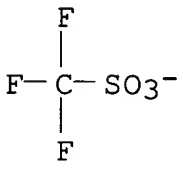
CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



IC ICM G03F007-039
ICS C08F220-26; C08K005-00; C08L033-06; G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
ST amplified **photoresist** alicyclic pendant resin microphotofabrication; ethyladamantyl butyrolactone methacrylate amplified **photoresist** sharpness
IT Positive **photoresists**
(chem.-amplified; chem. amplified pos. **photoresists** contg. two different polymers with alicyclic hydrocarbyl pendants)
IT **Photolithography**
(submicron; chem. amplified pos. **photoresists** contg. two different polymers with alicyclic hydrocarbyl pendants)
IT Integrated circuits
(ultralarge-scale; chem. amplified pos. **photoresists**

contg. two different polymers with alicyclic hydrocarbyl pendants)

IT 288303-60-6P 307976-24-5P
(chem. amplified pos. **photoresists** contg. two different polymers with alicyclic hydrocarbyl pendants)

IT 348631-34-5 364736-22-1 398140-36-8 398140-45-9 471257-16-6
471257-17-7 471257-18-8 471257-19-9 471257-20-2 471257-22-4
471257-24-6 471257-25-7 471257-26-8 471257-27-9 471257-28-0
471257-29-1 471257-31-5 471257-32-6 471257-33-7 471257-34-8
471257-35-9 471257-36-0 471257-37-1 471257-38-2 471257-40-6
471257-41-7 471257-42-8 471257-43-9
(chem. amplified pos. **photoresists** contg. two different polymers with alicyclic hydrocarbyl pendants)

IT 66003-78-9 116808-67-4 138529-84-7 144089-15-6 144317-44-2
220155-94-2 241806-75-7 258342-00-6 258872-05-8 270563-93-4
284474-28-8 301153-78-6 312386-77-9 347193-28-6 391232-40-9
398141-19-0
(**photoacid** generators; chem. amplified pos. **photoresists** contg. two different polymers with alicyclic hydrocarbyl pendants)

L46 ANSWER 26 OF 36 HCA COPYRIGHT 2005 ACS on STN
137:302221 Deep-UV positive-working **photoresist** composition showing improved contact hole resolution and sidelobe suppression. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002296782 A2 20021009, 77 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-101521 20010330.

AB The title pos.-working **photoresist** compn. comprises (A) an acid-decomposable resin comprised of an aliph. cyclic hydrocarbon structural repeating unit and a crosslinking structural repeating unit -OC(R1)(R2)O- [R1, R2 = H, C1-4-alkyl], and (B) a **photoacid** generator. The **photoresist** compn. is esp. suitable for the **photolithog.** with the 193 nm ArF excimer laser.

IT **206861-54-3 307976-40-5**
(**photoacid** generator; deep-UV pos.-working **photoresist** compn. showing improved contact hole resoln. and side-lobe suppression)

RN 206861-54-3 HCA

CN Dibenzothiophenium, 5-phenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

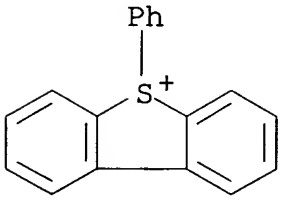
CM 1

CRN 45298-90-6
CMF C8 F17 O3 S

$^{-}O_3S-(CF_2)_7-CF_3$

CM 2

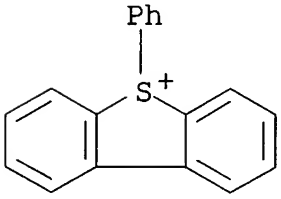
CRN 38347-29-4
CMF C18 H13 S



RN 307976-40-5 HCA
CN Dibenzothiophenium, 5-phenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

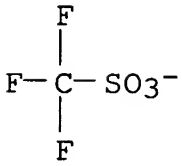
CM 1

CRN 38347-29-4
CMF C18 H13 S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



IC ICM G03F007-039

ICS C08K005-00; C08L101-12; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
ST pos working **photoresist** compn contact hole resoln sidelobe suppression; crosslinking agent pos working **photoresist** compn **photoacid** generator
IT **Photolithography**
(UV; deep-UV pos.-working **photoresist** compn. showing improved contact hole resoln. and side-lobe suppression)
IT Positive **photoresists**
(chem. amplification; deep-UV pos.-working **photoresist** compn. showing improved contact hole resoln. and side-lobe suppression)
IT Contact holes
Semiconductor device fabrication
(deep-UV pos.-working **photoresist** compn. showing improved contact hole resoln. and side-lobe suppression)
IT 469880-22-6P 469880-24-8P 469880-26-0P 469880-27-1P
469880-29-3P 469880-31-7P 469880-32-8P 469880-34-0P
469880-35-1P 469880-36-2P 469880-38-4P 469880-40-8P
469880-41-9P 469880-42-0P 469880-43-1P 469880-45-3P
469880-47-5P 469880-49-7P 469880-50-0P 469880-51-1P
469880-53-3P
(deep-UV pos.-working **photoresist** compn. showing improved contact hole resoln. and side-lobe suppression)
IT 66003-78-9 133710-62-0 144089-15-6 144317-44-2 145612-66-4
206861-54-3 220155-94-2 241806-75-7 258341-99-0
258342-00-6 258872-05-8 260061-58-3 284474-28-8 301525-08-6
307531-76-6 **307976-40-5** 312386-77-9 391232-40-9
(**photoacid** generator; deep-UV pos.-working **photoresist** compn. showing improved contact hole resoln. and side-lobe suppression)
IT 868-77-9, 2-Hydroxyethyl methacrylate
(prepn. of crosslinking structural unit-contg. monomer for pos.-working **photoresist** compn.)
IT 220462-37-3P
(prepn. of crosslinking structural unit-contg. monomer for pos.-working **photoresist** compn.)

L46 ANSWER 27 OF 36 HCA COPYRIGHT 2005 ACS on STN
137:302211 Ring-containing monomers, polymers for **resists**, photopolymer compositions, and their use in pattern formation and electronic part manufacture. Shinoda, Naomi; Gokochi, Toru (Toshiba Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2002293829 A2 20021009, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-98186 20010330.
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The monomers have 5 to 15-membered (un)bridged alicyclic rings contg. S(:O)2O, S(:O)O, or S(:O)2. The polymers have repeating units of the above monomers or consist of the following monomers I [at least one of X is S(:O)2O, S(:O)O, or S(:O)2; residual X are (CR22)n; R2 = H, monovalent org.; n = 0-2; R = same or different H or monovalent org.; at least one R = polymerizable double bond-contg. monovalent org.], II (X = same as above; R = same as above) and/or III [X = S(:O)2O, S(:O)O, S(:O)2; n = 0-2]. Optionally, the monomers contain polymerizable double bonds. The photopolymer compns. contain the above polymers and **photoacid** generators. The pattern formation is carried out by forming a layer contg. the photopolymer compns. on a substrate, pattern-exposing predetd. regions on the layer, heating the layer, developing the layer with an aq. alk. soln., and selectively dissolving and removing the exposed or unexposed parts. The electronic part is manufd. by the above pattern formation steps with F2 laser exposure and then etching the substrate using the resulting **resist** pattern as a **mask**. The monomers give the **resist** polymers having good transparency to low-wavelength (.ltoreq.160 nm) rays.

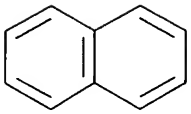
IT **137867-61-9**, NAT 105
(**photoacid** generator; ring-contg. monomers, polymers for **resists**, photopolymer compns., and their use in pattern formation and electronic part manuf.)

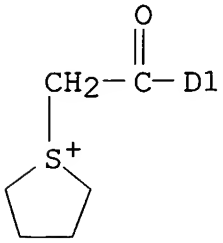
RN 137867-61-9 HCA

CN Thiophenium, tetrahydro-1-[2-(naphthalenyl)-2-oxoethyl]-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

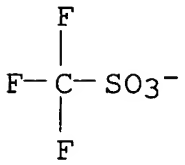
CRN 137867-59-5
CMF C16 H17 O S
CCI IDS





CM 2

CRN 37181-39-8
CMF C F3 O3 S



IC ICM C08F028-06
ICS C07D327-06; C07D333-48; C08K005-00; C08L041-00; G03F007-027; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76

ST ring monomer polymer **photoresist** pattern formation; fluorine laser **photoresist** pattern elec part manuf

IT Excimer lasers
(F2, **photolithog.** with; ring-contg. monomers, polymers for **resists**, photopolymer compns., and their use in pattern formation and electronic part manuf.)

IT Electronic device fabrication
Photolithography
Photoresists
(ring-contg. monomers, polymers for **resists**, photopolymer compns., and their use in pattern formation and electronic part manuf.)

IT 66003-78-9, TPS 105 85342-62-7, NAI 105 **137867-61-9**, NAT 105 467428-34-8, TPS 109
(**photoacid** generator; ring-contg. monomers, polymers for **resists**, photopolymer compns., and their use in pattern formation and electronic part manuf.)

IT 26745-92-6P 467418-78-6P, Acrylonitrile-2,5-dihydrothiophene 1,1-dioxide copolymer 467418-79-7P, Acrylonitrile-1,2-oxathiane, 2,2-dioxide copolymer 467418-80-0P
(ring-contg. monomers, polymers for **resists**, photopolymer compns., and their use in pattern formation and electronic part manuf.)

L46 ANSWER 28 OF 36 HCA COPYRIGHT 2005 ACS on STN
136:393284 Chemically amplifying type positive **resist** composition. Uetani, Yasunori; Ohashi, Kenji; Moriuma, Hiroshi (Sumitomo Chemical Company, Limited, Japan). Eur. Pat. Appl. EP 1207423 A1 20020522, 14 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2001-126571 20011115. PRIORITY: JP 2000-352700 20001120.

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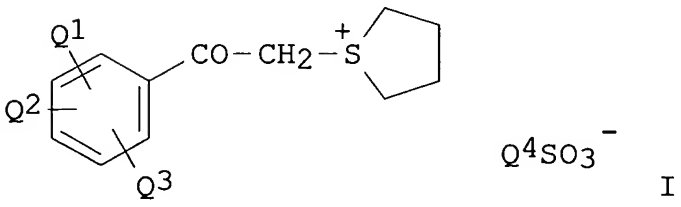


I

AB The present invention relates to a chem. amplifying type pos. **resist** compn. suitable for use in the lithog. utilizing an ArF or KrF excimer laser and excellent in the shape of profile. The invention **photoresist** compn. comprises (1) a resin which has an alkali-sol. group protected by a 2-alkyl-2-adamantyl group or 1-adamantyl-1-alkylalkyl group, and which, per se, is insol. or slightly sol. in alkali but becomes sol. in alkali by the action of an acid; (2) a sulfonium salt **acid generating** agent represented by I (Q1-3 = H, hydroxyl, c1-6 alkyl or alkoxy; Q4 = perfluoroalkyl which may have a cyclic structure).

IT **301664-71-1P 301664-72-2P 398141-19-0P**
(**photoacid** generator for chem. amplifying pos. **photoresist**)

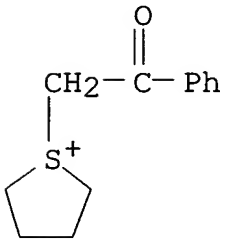
RN 301664-71-1 HCA

CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA

INDEX NAME)

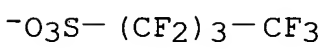
CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

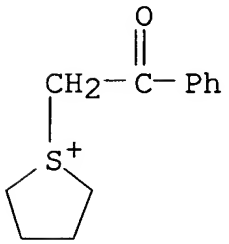
CRN 45187-15-3
CMF C4 F9 O3 S



RN 301664-72-2 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 45298-90-6

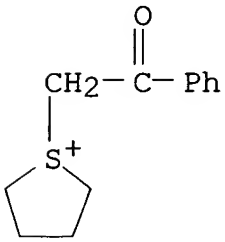
CMF C8 F17 O3 S

$^{-}O_3S-(CF_2)_7-CF_3$

RN 398141-19-0 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

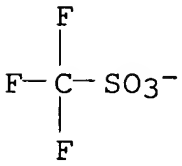
CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



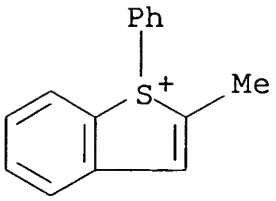
IC ICM G03F007-004
ICS G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST chem amplifying pos **photoresist photoacid**
IT **Photolithography**
(EUV; polymer resin and **photoacid** generator for)
IT Positive **photoresists**
(chem amplifying; polymer resin and **photoacid** generator for)
IT **301664-71-1P 301664-72-2P 398141-19-0P**

(**photoacid** generator for chem. amplifying pos. **photoresist**)
IT 426262-70-6P
(polymer resin and **photoacid** generator for chem. amplifying pos. **photoresist**)
IT 70-11-1, Phenacyl bromide 110-01-0, Tetrahydrothiophene 2795-39-3, Potassium perfluorooctanesulfonate 2926-27-4, Potassium trifluoromethanesulfonate 111831-41-5
(prepn. of **photoacid** generator for chem. amplifying pos. **photoresist**)
IT 19158-66-8P
(prepn. of **photoacid** generator for chem. amplifying pos. **photoresist**)

L46 ANSWER 29 OF 36 HCA COPYRIGHT 2005 ACS on STN
136:224211 **Photoacid** generators and **photoresists** comprising same. Cameron, James F.; Pohlers, Gerhard (Shipley Company, L.L.C., USA). PCT Int. Appl. WO 2002019033 A2 20020307, 41 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US26438 20010824. PRIORITY: US 2000-648022 20000825.
AB New **photoacid** generator compds. ("PAGs") are provided and **photoresist** compns. that comprise such compds. In particular, ionic PAGs are provided that include tri-naphthyl sulfonium, thienyl iodonium, thienyl sulfonium, pentafluorophenyl iodonium and pentafluorophenyl sulfonium compds. PAGs of the invention are particularly useful as photoactive components of **photoresists** imaged at short wavelengths such as sub-300 nm, sub-200 nm and sub-160 nm such as 248 nm, 193 nm and 157 nm.
IT **153394-11-7P**
(**photoacid** generators for **photoresists** compn.)
RN 153394-11-7 HCA
CN Benzo[b]thiophenium, 2-methyl-1-phenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

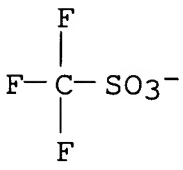
CM 1

CRN 153394-10-6
CMF C15 H13 S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



IC ICM G03F007-00
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST **photoacid** generator **photoresist**
IT **Photolithography**
(UV; **photoacid** generators and **photoresists** in relation to)
IT **Photoresists**
(**photoacid** generators and **photoresists** comprising same)
IT **153394-11-7P** 353237-81-7P 402571-91-9P 402571-93-1P 402571-95-3P
(**photoacid** generators for **photoresists** compn.)
IT 90-14-2, 1-Iodonaphthalene 100-58-3, Phenylmagnesium bromide 879-05-0, Pentafluorophenylmagnesium bromide 1195-14-8 1313-82-2, Sodium sulfide, reactions 1493-13-6, Triflic acid 3988-99-6, Di-(2-Thienyl)sulfide 7719-09-7, Thionyl chloride 14067-34-6, Copperbenzoate 16718-12-0 66003-76-7, Diphenyliodonium triflate
(prepn. of **photoacid** generators for **photoresists** compn.)
IT 607-53-4P, Di(1-naphthyl)sulfide 26346-84-9P
(prepn. of **photoacid** generators for **photoresists** compn.)

IT 170636-47-2, tert-Butylacrylate-styrene-vinylphenol copolymer
195000-69-2, 2-Methyl-2-adamantyl methacrylate-.beta.-Methacryloyloxy-.gamma.-butyrolactone copolymer 402571-96-4, m-Hydroxystyrene-p-hydroxystyrene-2-methyl-2-adamantylmethacrylate copolymer
(resin binder; **photoresists** compn. contg. **photoacid** generators and)

L46 ANSWER 30 OF 36 HCA COPYRIGHT 2005 ACS on STN
136:175472 Positive photosensitive composition for photofabrication using deep UV ray. Kodama, Kunihiko; Aoai, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1179750 A1 20020213, 120 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2001-117796 20010802. PRIORITY: JP 2000-240059 20000808.

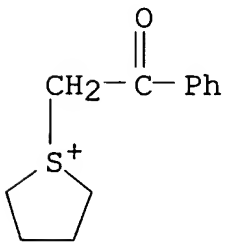
AB A pos. photosensitive compn. comprises: (A) a compd. **generating** an **acid** upon irradn. with one of an actinic ray and radiation; (B) a resin contg. a monocyclic or polycyclic alicyclic hydrocarbon structure and increasing the soly. to an alkali developer by the action of an acid; and (C) an onium salt of carboxylic acid. The present invention relates to a pos. photosensitive compn. for use in the prodn. process of a semiconductor such as IC, in the prodn. of a circuit board such as liq. crystal and thermal head, and in other photofabrication processes.

IT **301664-71-1 301664-72-2 398141-19-0 398141-23-6**
(**photoacid** generator; deep UV photofabrication pos. **photoresist** compn. contg.)

RN 301664-71-1 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

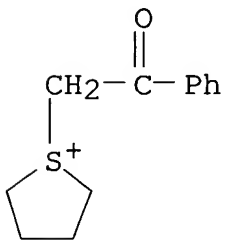
CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

RN 301664-72-2 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

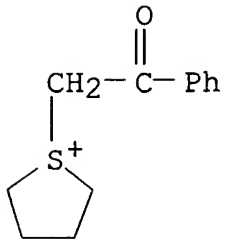
CRN 45298-90-6
CMF C8 F17 O3 S

$^{-}O_3S-(CF_2)_7-CF_3$

RN 398141-19-0 HCA
CN Thiophenium, tetrahydro-1-(2-oxo-2-phenylethyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

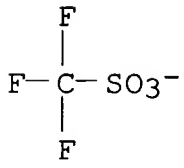
CM 1

CRN 58162-29-1
CMF C12 H15 O S



CM 2

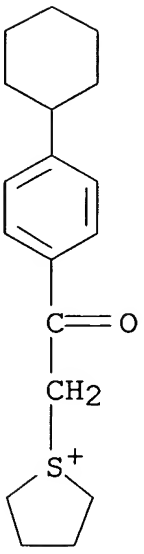
CRN 37181-39-8
CMF C F3 O3 S



RN 398141-23-6 HCA
CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 398141-22-5
CMF C18 H25 O S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-039
ICS G03F007-004
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST **photoresist** compn **photolithog** resin onium salt
IT **Photolithography**
(UV; polymer resin onium salt and **photoacid** **photoresist** compn. in relation to)
IT **Photoresists**
(polymer resin onium salt **photoacid** for)
IT Polysiloxanes, uses
(surfactant, KP-341, Troysol S-366; deep UV photofabrication pos. **photoresist** compn. contg.)
IT 66003-78-9, Triphenylsulfonium triflate
(**acid generator**; deep UV photofabrication pos. **photoresist** compn. contg.)
IT 484-47-9, 2,4,5-Triphenylimidazole 1116-76-3, Trioctylamine 3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-nonene 3040-44-6, 1-Piperidineethanol 19293-63-1, Dicyclohexylmethylamine

24544-04-5, 2,6-Diisopropylaniline 138529-81-4,
Bis(cyclohexylsulfonyl)diazomethane 144317-44-2,
Triphenylsulfonium perfluorobutanesulfonate 153698-46-5,
Triphenylsulfonium pentafluorobenzenesulfonate 169965-90-6
218151-20-3, Bis(tert-butylphenyl)iodonium perfluorobutanesulfonate
389859-76-1
(deep UV photofabrication pos. **photoresist** compn. contg.)

IT 122752-67-4, tert-Butyl cholate
(dissoln. inhibiting compd.; deep UV photofabrication pos. **photoresist** compn. contg.)

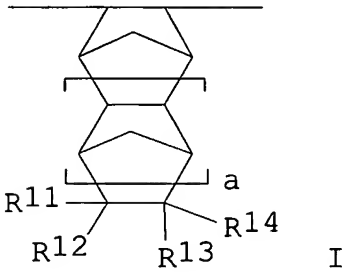
IT 1511-10-0 19600-49-8 359434-73-4 359434-76-7 365971-69-3
365971-71-7 365971-84-2 398141-24-7 398141-25-8 398141-29-2
398141-30-5 398141-31-6 398141-33-8 398141-34-9 398141-37-2
398141-39-4 398141-41-8 398141-43-0 398141-45-2 398141-47-4
398141-49-6 398141-60-1 398141-61-2 398141-62-3 398141-63-4
(onium salt; deep UV photofabrication pos. **photoresist** compn. contg.)

IT 34684-40-7 133710-62-0 171292-12-9 177034-80-9 194999-85-4
197447-16-8 227199-92-0 241806-75-7 258872-05-8 270563-93-4
284474-28-8 300374-81-6 301153-77-5 301153-78-6
301664-71-1 **301664-72-2** 347193-28-6
347193-29-7 383367-32-6 391232-40-9 398141-17-8 398141-18-9
398141-19-0 398141-21-4 **398141-23-6**
(**photoacid** generator; deep UV photofabrication pos. **photoresist** compn. contg.)

IT 177080-68-1P, 2-Methyl-2-adamantyl methacrylate-mevalonic lactone methacrylate copolymer 195000-67-0P 195154-83-7P 216308-45-1P,
Methacrylic acid-2-Methyl-2-adamantyl methacrylate-mevalonic lactone methacrylate copolymer 250378-10-0P 288303-55-9P 297156-40-2P
304441-22-3P, Diethyleneglycol monomethyl ether methacrylate-2-Methyl-2-adamantyl methacrylate-mevalonic lactone methacrylate copolymer 307976-24-5P 324770-96-9P 357413-69-5P
357413-70-8P 357413-71-9P 364736-22-1P 391232-36-3P
391613-77-7P 398140-36-8P 398140-38-0P 398140-40-4P
398140-43-7P 398140-45-9P 398140-47-1P 398140-48-2P
398140-50-6P 398140-52-8P 398140-53-9P 398140-54-0P
398140-55-1P 398140-57-3P 398140-59-5P 398140-60-8P
398140-62-0P 398140-64-2P 398140-65-3P 398140-68-6P
398140-69-7P 398140-71-1P 398140-72-2P 398140-73-3P
398140-74-4P 398140-75-5P 398140-76-6P 398140-77-7P
398140-78-8P 398140-79-9P 398140-80-2P 398140-81-3P
398140-82-4P 398140-84-6P 398140-85-7P 398140-86-8P
398140-87-9P 398140-88-0P 398140-89-1P 398140-90-4P
398140-91-5P 398140-92-6P 398140-93-7P 398140-94-8P
398140-95-9P 398140-97-1P 398140-98-2P 398140-99-3P
398141-00-9P 398141-03-2P 398141-04-3P 398141-05-4P
398141-06-5P 398141-07-6P 398141-08-7P 398141-10-1P

398141-11-2P 398141-13-4P 398141-14-5P 398141-15-6P
398141-16-7P 398152-52-8P
(resin; deep UV photofabrication pos. **photoresist** compn. contg.)
IT 137462-24-9, Megafac F176 216679-67-3, Megafac R08
(surfactant; deep UV photofabrication pos. **photoresist** compn. contg.)

L46 ANSWER 31 OF 36 HCA COPYRIGHT 2005 ACS on STN
135:364522 Positively-working **photoresist** composition containing norbornene polymer. Sato, Kenichiro; Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001318465 A2 20011116, 31 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-138882 20000511.
GI



I

AB The compn. contains a compd. **generating acids** under radiation irradn. and a polymer involving norbornene polymer-type repeating unit I [R11-R14 = H, (substituted) alkyl; a = 0, 1] and units contg. an acid-decomposable group represented as CO2CHR15O(R16A)mR17 [R15 = H, alkyl; R16 = direct bond, H, (substituted) C1-20 linear or branched alkyl; A = direct bond, ether, thioether, amide group; R17 = H, (substituted) linear or branched alkyl, (substituted) aryl, (substituted) aralkyl, (substituted) alicyclic group, (substituted) cyclic ether] whose dissolving rate in an alk. developer is increased by acids. The compn. is suitable for **photolithog.** in semiconductor device fabrication, esp., for forming contact holes with enhanced post exposure delay (PED) stability.
IT **373365-63-0**
(**acid-generating** agent; in pos.-working **photoresist** compn. contg. norbornene polymer with enhanced post exposure delay stability)
RN 373365-63-0 HCA
CN Dibenzothiophenium, 5-phenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

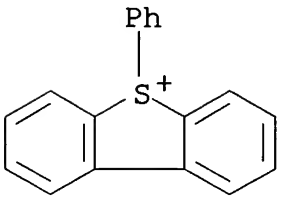
CM 1

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

CM 2

CRN 38347-29-4
CMF C18 H13 S



IC ICM G03F007-039
ICS C08F220-00; C08F222-04; C08F232-08; C08K005-00; C08L033-04; C08L035-00; C08L045-00; G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
ST pos working **photoresist** semiconductor device fabrication; post exposure delay stability **photoresist**; norbornene polymer pos working **photoresist**
IT Polysiloxanes, uses
(Troysol S 366, surfactant; in pos.-working **photoresist** compn. contg. norbornene polymer with enhanced post exposure delay stability)
IT Surfactants
(in pos.-working **photoresist** compn. contg. norbornene polymer with enhanced post exposure delay stability)
IT Positive **photoresists**
(pos.-working **photoresist** compn. contg. norbornene polymer with enhanced post exposure delay stability)
IT Semiconductor device fabrication
(pos.-working **photoresist** compn. contg. norbornene polymer with enhanced post exposure delay stability for)
IT 100-42-5, uses 1886-74-4 138529-81-4 138529-84-7 144089-15-6 144317-44-2 241806-75-7 258341-99-0 258872-05-8 301525-08-6 312386-77-9 324771-13-3 **373365-63-0**

(**acid-generating** agent; in pos.-working **photoresist** compn. contg. norbornene polymer with enhanced post exposure delay stability)

IT 3001-72-7, DBN 41556-26-7, Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate
(in pos.-working **photoresist** compn. contg. norbornene polymer with enhanced post exposure delay stability)

IT 373365-62-9P
(pos.-working **photoresist** compn. contg. norbornene polymer with enhanced post exposure delay stability for)

IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R08
(surfactant; in pos.-working **photoresist** compn. contg. norbornene polymer with enhanced post exposure delay stability)

L46 ANSWER 32 OF 36 HCA COPYRIGHT 2005 ACS on STN

135:38897 Production method of negative **resist** pattern for microelectronic manufacture utilizing chemical amplification **resist**. Elian, Klaus; Hien, Stefan; Richter, Ernst; Sebald, Michael (Infineon Technologies A.-G., Germany). Ger. Offen. DE 19958967 A1 20010613, 4 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1999-19958967 19991207.

AB The title method comprises a process to coat a substrate with an chem. amplification **resist**, a process to dry the **resist** layer, a process to irradiate the **resist** layer with light, x-ray, electron beam, or ion beam, a process to heat the **resist** layer, and a process to develop the **resist** layer with an aq. alk. development soln. The chem. amplification **resist** compn. comprises a polymer, a thermo-**acid generator**, a **photo**-base **generator**, a solvent, and optionally one or more additives.

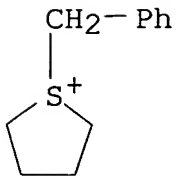
IT **343775-57-5**
(thermo-**acid generator**; prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)

RN 343775-57-5 HCA

CN Thiophenium, tetrahydro-1-(phenylmethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 46116-19-2
CMF C11 H15 S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

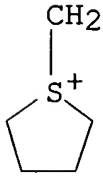
IC ICM G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST chem amplification **resist** neg **resist** pattern formation; microelectronic fabrication chem amplification **resist**
IT **Photoresists**
(chem. amplified; prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist**)
IT Electron beam lithography
Ion beam lithography
Photolithography
Semiconductor device fabrication
X-ray lithography
(prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist**)
IT 119137-03-0, o-Nitrobenzyl-N-cyclohexylcarbamate
(**photo**-base **generator**; prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)
IT 467-69-6, 9-Hydroxy-9-fluorenecarboxylic acid 1468-95-7, 9-Anthracenemethanol
(prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)
IT 108-65-6, 1-Methoxy-2-propylacetate
(prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification

resist contg.)
IT 343775-56-4
(prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)
IT **343775-57-5**
(thermo-**acid generator**; prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)

L46 ANSWER 33 OF 36 HCA COPYRIGHT 2005 ACS on STN
135:38896 Production method of negative **resist** pattern for microelectronic manufacture utilizing chemically amplification **resist**. Elian, Klaus; Hien, Stefan; Richter, Ernst; Sebald, Michael (Infineon Technologies A.-G., Germany). Ger. Offen. DE 19958966 A1 20010613, 6 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1999-19958966 19991207.
AB The title method comprises a process to coat a substrate with an chem. amplification **resist**, a process to dry the **resist** layer, a process to irradiate the **resist** layer with light, x-ray, electron beam, or ion beam, a process to heat the **resist** layer, a process to develop the **resist** layer with an aq. alk. development soln., and a process to silylate the **resist** layer. The chem. amplification **resist** compn. comprises a polymer, a thermo-**acid generator**, a **photo**-base **generator**, a solvent, and optionally one or more additives.
IT **343775-57-5**
(thermo-**acid generator**; prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)
RN 343775-57-5 HCA
CN Thiophenium, tetrahydro-1-(phenylmethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 46116-19-2
CMF C11 H15 S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IC ICM G03F007-039
ICS G03F007-32; H01L021-312; G03F007-16
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST chem amplification **resist** neg **resist** pattern formation; microelectronic fabrication chem amplification **resist**
IT **Photoresists**
(chem. amplified; prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist**)
IT Polysiloxanes, reactions
(di-Me, amino-terminated, silylation; prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist**)
IT Electron beam lithography
Ion beam lithography
Photolithography
Semiconductor device fabrication
Silylation
X-ray lithography
(prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist**)
IT 119137-03-0, o-Nitrobenzyl-N-cyclohexylcarbamate
(**photo**-base **generator**; prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)
IT 467-69-6, 9-Hydroxy-9-fluorenecarboxylic acid 1468-95-7, 9-Anthracenemethanol
(prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)
IT 108-65-6, 1-Methoxy-2-propylacetate
(prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)
IT 343776-23-8

(prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)

IT **343775-57-5**
(thermo-**acid generator**; prodn. method of neg. **resist** pattern for microelectronic manuf. utilizing chem. amplification **resist** contg.)

L46 ANSWER 34 OF 36 HCA COPYRIGHT 2005 ACS on STN
133:328608 Materials for electronic devices and their manufacture.
Sato, Hozumi; Okaniwa, Motoki; Udaka, Tomohiro; Chiba, Hideki (JSR Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000298352 A2 20001024, 20 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-106783 19990414.

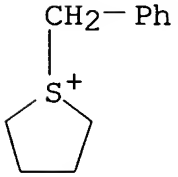
AB The materials comprise (A) hydrolyzable silanes R1pSiX4-p (R1 = C1-12 nonhydrolyzable org. group; X = hydrolyzable group; p = integer of 0-3) and/or their hydrolyzates, (B) **photoacid** generators, and (C) dehydration agents. Use of the materials as semiconductor sealants, semiconductor underfills, semiconductor protective layers, interlayer insulators, circuit substrates, leveling materials, circuit protective layers, etch **resists**, plating **resists**, and liq. crystal sealants is also claimed. The materials are used by their application, exposure, and heating. The materials may be processed by **photolithog.** The materials have excellent storage stability, heat resistance, and elec. insulating properties.

IT **87301-55-1**, San-Aid SI-100
(**photoacid** generator; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)

RN 87301-55-1 HCA
CN Thiophenium, tetrahydro-1-(phenylmethyl)-, (OC-6-11)-hexafluoroantimonate(1-) (9CI) (CA INDEX NAME)

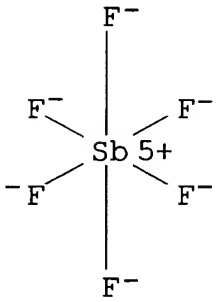
CM 1

CRN 46116-19-2
CMF C11 H15 S



CM 2

CRN 17111-95-4
CMF F6 Sb
CCI CCS



IC ICM G03F007-075
ICS G02F001-1339; G03F007-004; H01L021-027; H05K003-00; H05K003-06; H05K003-28
CC 76-14 (Electric Phenomena)
Section cross-reference(s): 38, 74
ST electronic device insulator hydrolyzable silicone compn; semiconductor device insulator compn photocurable; interlayer insulator hydrolyzable silicone compn; liq crystal sealant hydrolyzable silicone compn; **photoresist** hydrolyzable silicone compn **photolithog**
IT Polysiloxanes, uses
(acrylic; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)
IT **Resists**
(etching; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)
IT Polysiloxanes, uses
Polysiloxanes, uses
(fluorine-contg.; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)
IT Semiconductor devices
(insulators and sealants for; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)
IT Coating materials
Electric insulators
Photolithography
Photoresists
Potting compositions

Sealing compositions
(photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)

IT Silsesquioxanes
(photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)

IT Fluoropolymers, uses
Fluoropolymers, uses
(polysiloxane-; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)

IT Electric circuits
(protective coatings for; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)

IT Liquid crystal displays
(sealants for; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)

IT 149-73-5, Methyl orthoformate
(dehydration agent; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)

IT 66003-78-9 **87301-55-1**, San-Aid SI-100
(**photoacid** generator; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)

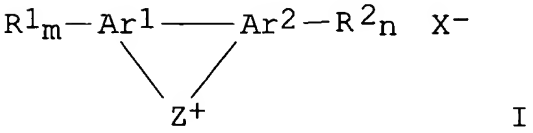
IT 139301-16-9
(**photoacid** generator; photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)

IT 1185-55-3DP, Methyltrimethoxysilane, reaction products with fluorine-contg. vinyl polymers and .gamma.-isocyanatopropyltriethoxysilane 24801-88-5DP, .gamma.-Isocyanatopropyltriethoxysilane, reaction products with fluorine-contg. vinyl polymers and methyltrimethoxysilane 25498-03-7P, Methyltrimethoxysilane homopolymer 153315-80-1P, Methyltrimethoxysilane homopolymer, sru 302841-60-7P 302897-86-5DP, Ethyl vinyl ether-hexafluoropropylene-hydroxybutyl vinyl ether-NE 30 copolymer, reaction products with .gamma.-isocyanatopropyltriethoxysilane and methyltrimethoxysilane
(photocurable compns. contg. hydrolyzable silane, **photoacid** generators, and dehydration agents for use as insulators in electronic devices)

L46 ANSWER 35 OF 36 HCA COPYRIGHT 2005 ACS on STN

127:11099 Photosensitive composition for manufacturing semiconductor devices. Asakawa, Koji; Ushirogochi, Toru; Shida, Naomi; Nakase, Makoto (Kabushiki Kaisha Toshiba, Japan). Ger. Offen. DE 19642053 A1 19970417, 35 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1996-19642053 19961011. PRIORITY: JP 1995-263829 19951012.

GI



I

AB The title compn., for forming submicron patterns with an ArF-excimer laser or F2-excimer laser, comprises a compd. with acid-decomposable groups and a **photoacid** generator represented by a general formula I (Ar1, Ar2 = arom. ring, condensed arom. ring; R1, R2 = halo, org. group; X = CF3SO3, CH3SO3, CF3COOH, ClO4, SbF6, AsF6; Z = Cl, Br, I, S-R, Se-R; R = C1-10 alkyl, C1-10 perfluoroalkyl; m, n .gtoreq.0).

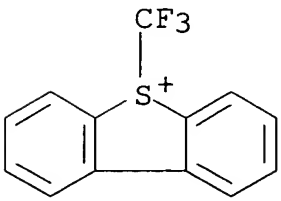
IT **129946-88-9 160656-59-7 189999-35-7 190184-69-1**
(**photoacid** generator in **photoresist** compn.)

RN 129946-88-9 HCA

CN Dibenzothiophenium, 5-(trifluoromethyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

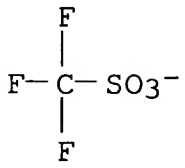
CM 1

CRN 129946-87-8
CMF C13 H8 F3 S



CM 2

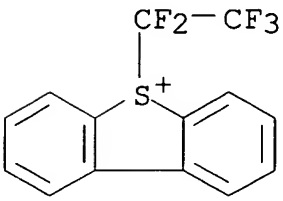
CRN 37181-39-8
CMF C F3 O3 S



RN 160656-59-7 HCA
CN Dibenzothiophenium, 5-(pentafluoroethyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

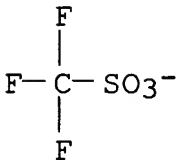
CM 1

CRN 160656-58-6
CMF C14 H8 F5 S



CM 2

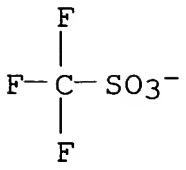
CRN 37181-39-8
CMF C F3 O3 S



RN 189999-35-7 HCA
CN Dibenziodolium, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

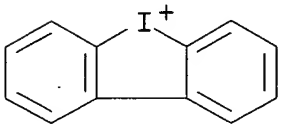
CM 1

CRN 37181-39-8
CMF C F3 O3 S



CM 2

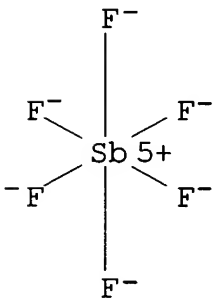
CRN 244-54-2
CMF C12 H8 I



RN 190184-69-1 HCA
CN Dibenziodolium, (OC-6-11)-hexafluoroantimonate(1-) (9CI) (CA INDEX NAME)

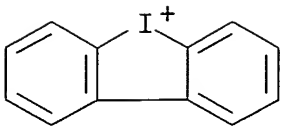
CM 1

CRN 17111-95-4
CMF F6 Sb
CCI CCS



CM 2

CRN 244-54-2
CMF C12 H8 I



IC ICM G03F007-039
ICA C07D333-76; C07D345-00; C07D347-00
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST **photoresist** compn **photoacid** generator submicron **photolithog**
IT **Photoresists**
Semiconductor devices
(photosensitive compn. for manufg. semiconductor devices)
IT 6478-21-3 18116-05-7 18116-06-8 65084-44-8 129922-33-4 **129946-88-9 160656-59-7 189999-35-7** 189999-36-8 **190184-69-1**
(**photoacid** generator in **photoresist** compn.)

L46 ANSWER 36 OF 36 HCA COPYRIGHT 2005 ACS on STN
122:92629 Negative **resists** for I-line lithography utilizing acid catalyzed intramolecular dehydration reaction. Ueno, Takumi; Uchino, Shou-ichi; Hattori, Keiko T.; Onozuka, Toshihiko; Shirai, Sei-ichiro; Moriuchi, Noboru; Hashimoto, Michiaki; Koibuchi, Shigeru (Central Research Laboratory, Hitachi Ltd., Kokubunji, 185, Japan). Proceedings of SPIE-The International Society for Optical Engineering, 2195(Advances in Resist Technology and Processing XI), 173-81 (English) 1994. CODEN: PSISDG. ISSN: 0277-786X.
AB Chem. amplification neg. **resist** system composed of a novolak resin, a carbinol and an **acid generator** is investigated for i-line phase-shift lithog. The reaction in this **resist** is based on an acid-catalyzed intramol. dehydration reaction. The dehydration products act as aq.-base dissoln. inhibitors, and carbinol compds. in unexposed areas work as dissoln. promoters. The **resist** composed of a novolak resin, 1,4-bis(.alpha.-hydroxyisopropyl)benzene (DIOL-1) and 2-naphthoylmethyltetramethylenesulfonium triflate (PAG-2) gives the best lithog. performance in terms of sensitivity and resoln. Line-and-space patterns of 0.275 .mu.m are obtained using an i-line stepper (NA:0.45) in conjunction with a phase shifting **mask**.
IT **160509-78-4**
(**photoacid generator; acid** -catalyzed intramol. dehydration of carbinols in chem. amplification neg. **resist** for i-line phase-shift

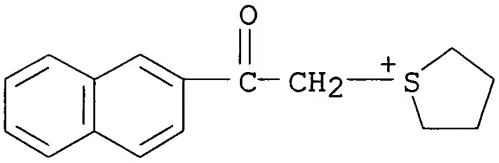
lithog.)

RN 160509-78-4 HCA

CN Thiophenium, tetrahydro-1-[2-(2-naphthalenyl)-2-oxoethyl]-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

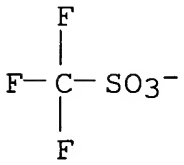
CM 1

CRN 71967-57-2
CMF C16 H17 O S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST acid catalyzed intramol dehydration carbinol **photoresist;** chem amplification neg **resist photolithog;** phase shift i line lithog

IT Dehydration, chemical
(intramol., acid-catalyzed intramol. dehydration of carbinols in chem. amplification neg. **resist** for i-line phase-shift lithog.)

IT Phenolic resins, uses
(novolak, acid-catalyzed intramol. dehydration of carbinols in chem. amplification neg. **resist** for i-line phase-shift lithog.)

IT **Lithography**
(**photo-, acid**-catalyzed intramol. dehydration of carbinols in chem. amplification neg. **resist** for i-line phase-shift lithog.)

IT **Resists**

(**photo**-, neg.-working, **acid**-catalyzed intramol. dehydration of carbinols in chem. amplification neg. **resist** for i-line phase-shift lithog.)

IT 1999-85-5 2225-30-1, 1,2,4-Tris(.alpha.-hydroxyisopropyl)benzene 2948-46-1, 1,4-Bis(.alpha.-hydroxyisopropyl)benzene 19576-38-6, 1,3,5-Tris(.alpha.-hydroxyisopropyl)benzene 22726-67-6 24157-82-2, 2,6-Bis(2-hydroxy-2-propyl)naphthalene 54609-82-4 81582-25-4
(carbinol; acid-catalyzed intramol. dehydration of carbinols in chem. amplification neg. **resist** for i-line phase-shift lithog.)

IT 3584-23-4, 2-(p-Methoxyphenyl)-4,6-bis(trichloromethyl)-s-triazine 3712-60-5, 2-(p-Chlorophenyl)-4,6-bis(trichloromethyl)-s-triazine 24504-22-1, 2-Phenyl-4,6-bis(trichloromethyl)-s-triazine 42573-57-9, 2-(4-Methoxystyryl)-4,6-bis(trichloromethyl)-1,3,5-triazine 66003-76-7, Diphenyliodonium triflate 69432-40-2, 2-(4-Methoxy-1-naphthyl)-4,6-bis(trichloromethyl)-1,3,5-triazine **160509-78-4** 160509-79-5
(**photoacid generator**; **acid**-catalyzed intramol. dehydration of carbinols in chem. amplification neg. **resist** for i-line phase-shift lithog.)